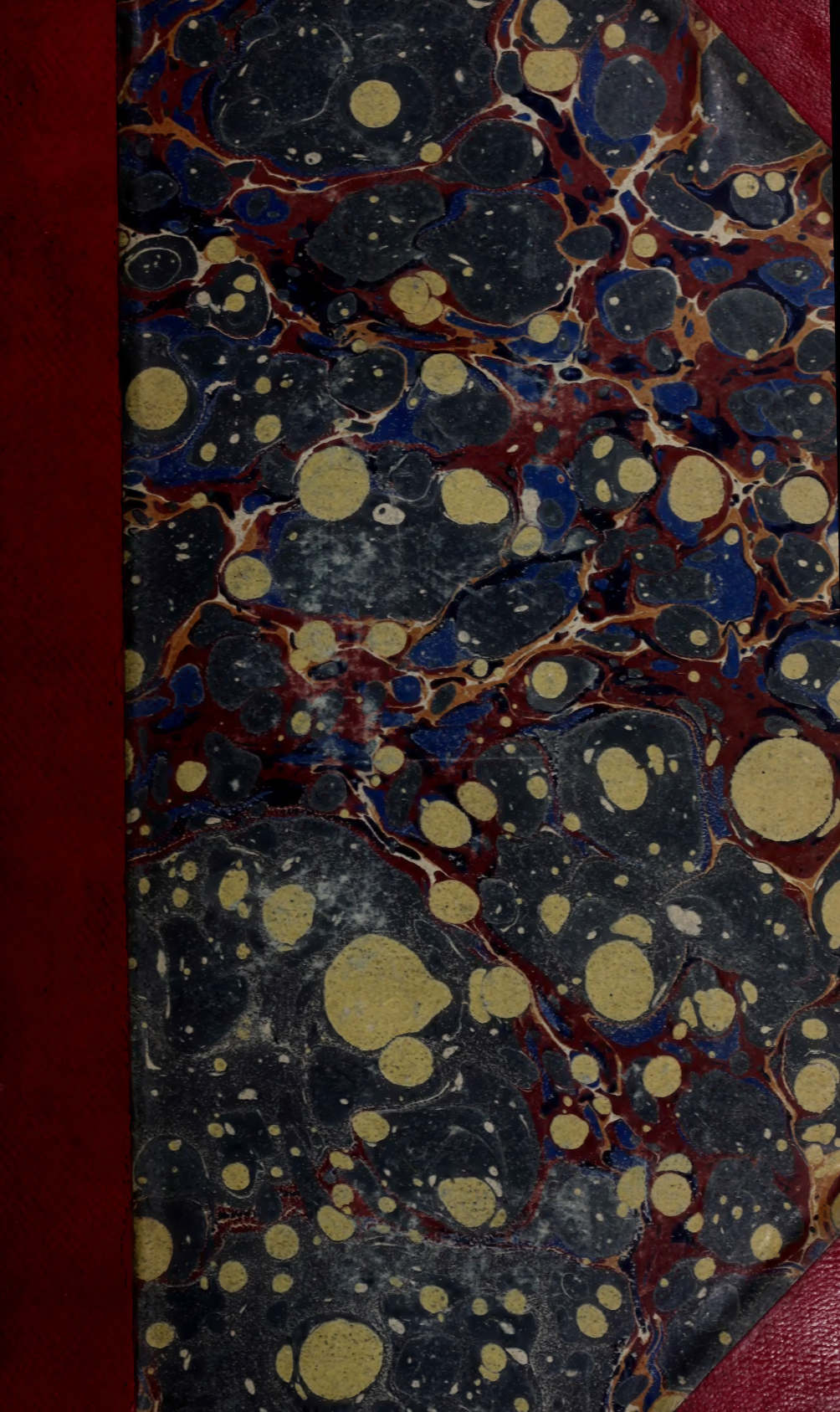

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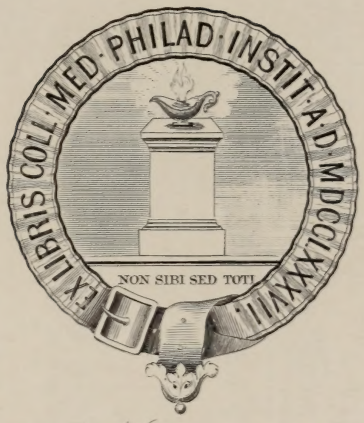
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THE CHICAGO

MEDICAL EXAMINER,

A MONTHLY JOURNAL, DEVOTED TO THE

EDUCATIONAL, SCIENTIFIC AND PRACTICAL INTERESTS

OF THE

MEDICAL PROFESSION.

EDITED BY

N. S. DAVIS, M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE, AND OF CLINICAL MEDICINE, IN THE CHICAGO MEDICAL COLLEGE, ETC., ETC.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE I.

AN ARTICLE ON MALIGNANT DIPHTHERIA, WITH REPORT OF ELEVEN CASES.

BY D. W. YOUNG, M.D., of Geneva, Illinois.

Read before the Fox River Valley Medical Association, at Geneva, Illinois, Jan. 2, 1865.

MR. PRESIDENT, AND GENTLEMEN OF THE FOX RIVER VALLEY MEDICAL ASSOCIATION:

I most respectfully ask your indulgence for a few moments, while I read the following brief history of cases of Diphtheria that have come under my observation since our last meeting.

I do not offer them expecting to present anything new or novel, either in theory or practice. I simply offer them for the purpose of adding my mite to the general record of the medical profession upon this subject, hoping thereby to induce such discussion as shall eventually produce a correct pathology and successful treatment of this terrible disorder.

CASE I.—Mrs. B., a stout, robust German lady, of bilious temperament, and previous good health, aged 23 years, married, and mother of one child aged 14 months, was attacked with chills, followed by fever and sore throat, about the 12th of August, 1864. At first, she resorted to the usual domestic remedies, but failing to obtain relief, called Dr. ——, her usual medical attendant. He attended her for several days, when,

15168

for some reason, she became dissatisfied with him and sent for me. I first visited her on the 19th of the month, and found her with considerable fever, small, rapid pulse, and extreme prostration. There was quite a good deal of swelling externally about the angles of the jaw, face, and neck. Upon inspecting the throat and mouth, I found the tonsils swollen and inflamed, and the left one and a large portion of the roof of the mouth, upon the left side, thickly covered with diphtheritic exudation. There was but little fetor, much less than I had usually found in these cases. The membrane was peculiarly tough, and closely adherent. The swelling of the tonsils was so extensive as to materially interfere with respiration and deglutition. She was very much prostrated, and seemed greatly alarmed concerning herself.

I removed as much of the exudation as I could conveniently, and then applied freely, with a surgeon's camel-hair brush, a saturated solution of nitrate of silver. I ordered her to steam her throat often and thoroughly with the fumes of strong vinegar and sage; also, to rub the skin externally freely with kerosene, and then apply a thin slice of salt pork. I left her quiniæ sulph. grs. xxx, Doveri pulv. grs. xv, divided into six powders, and gave one every four hours; also, 20 drops of the muriated tincture of iron every four hours. Made a strong solution of nutgalls and alum to use as a gargle.

August 20.—Mrs. B. no better; had spent a poor night. She looked and felt very bad. Some fever. Pulse 120, small, and quick; swelling about neck and face increasing, respiration labored, deglutition difficult and painful, exudation abundant and tenacious. Immediately in front of the left tonsil, extending up to and around the uvula was a deep, ragged, bad-looking ulcer. I again removed as much of the membrane as I could conveniently, then cauterized the ulcer thoroughly with the solid stick of nitrate of silver, and advised a continuance of the steaming and garling. Continued the other treatment.

Aug. 21, 9 *o'clock A.M.*—Patient looked bad. She said she was worse, and could not live long. She and her friends were greatly alarmed concerning her condition. External

swelling about the same. The kerosene and salt pork had produced a free eruption. Respiration still labored, deglutition very difficult and painful. When she attempted to swallow, a portion of the fluids were rejected through the nose. Pulse 123, and feeble, swelling of tonsils extreme, and both covered with exudation. The ulcer, spoken of at last visit, was about the same. She complained of being very tired and prostrate. Touched the ulcer again with the nitrate of silver, and continued all the other medicines. In consequence of her extreme prostration, I ordered her to have two table-spoonsful of bourbon whiskey every four hours.

Aug. 22*d*, 9 *o'clock A.M.*—Mrs. B. looked and felt much better. She had slept pretty well during the night, and felt more hopeful. Swelling about face and neck less, respiration and deglutition improving, pulse 118, slower and fuller, exudation not so profuse nor tenacious, no fetor, exudation peeled off quite easily in large flakes or chunks; the surface below was pale blue, and bled when touched; ulcer about the same, no deeper. Dissolved two drachms of kreosote in half an ounce of 95 per cent alcohol, and then washed the throat thoroughly with that mixture. Continued the other treatment, except substituting warm poultices for the salt pork, and advised the crowding of chicken broth, and other nourishment.

Aug. 23*d*, 10 *o'clock A.M.*—Patient improving in all respects except swallowing and talking. She had considerable pain when she swallowed, and a portion of the fluids were still rejected through the nose. She had also lost the power of articulation, and it was with the greatest difficulty that she could make us understand her wants. Throat looked much better, exudation disappearing, and ulcer healing. Again washed the throat with the kreosote mixture, and continued the other treatment as at last visit.

Aug. 24*th*, 10 *o'clock A.M.*—Mrs. B. improving rapidly in every respect except talking. Swelling was disappearing, and she swallowed better. Appetite improving, bowels regular, pulse 94, soft and fuller. Continued treatment.

Aug. 25*th*, 10 *o'clock A.M.*—Mrs. B. bolstered up in bed,

feeling finely. Swelling and exudation had pretty much disappeared, articulation improving, but still very imperfect. Advised a continuance of the muriated tincture of iron and bourbon whiskey in reduced quantities and at longer intervals, for several days, and left her. Sept. 28th, her husband called at my office, *paid his bill*, and said she was doing nicely, all but talking, and that was improving. Oct. 15th, I met her at one of her neighbors, and she was quite fleshed up, and looked well. Her articulation was still very imperfect. From her friends I learn that her speech at this date is not fully restored, but improving.

Case II.—*August 30th*, 1864, was called to see Willie W., a stout, fleshy German boy, aged six years, of good constitution and previous good health, who was attacked with chills on the day previous, and had some fever, and considerable swelling about the angles of the jaw, face, and neck. He complained a great deal of stiffness and soreness in the muscles of the neck and throat. Upon examining his mouth and throat, I found the tonsils largely swollen, and they and a portion of the roof of the mouth well covered with diphtheritic exudation. He had no appetite, and he said it pained him when he swallowed. Pulse 100 per minute, and quick, bowels had moved that morning, skin dry and hot, considerable thirst. I left him quiniæ sulph. grs. xv, pulvis Doveri, grs. v, divided into five powders, one to be given every four hours; also, 10 drops of muriated tincture of iron every four hours; steam the throat freely and frequently with the fumes of sour vinegar and sage, rub the skin about the angles of the jaw and the neck well with kerosene, and apply a thin slice of salt pork about the neck.

Aug. 31st, 11 *o'clock A.M.*—Willie no better. His mother said that he had passed an uneasy, restless night. He had not had any recurrence of chills since the first day. Fever subsiding a little, skin slightly moist, pulse 110 and very quick, swelling externally extending; the kerosene and pork have irritated the skin considerably, he had considerable difficulty in swallowing, tonsils and uvula well enveloped in exudation, very little fetor. Continued all the treatment of the previous day, and ordered an addition of a tablespoonful of bourbon whiskey every four hours.

Sept. 1*st*, 10 *o'clock A.M.*—Willie is decidedly better in all respects. Rested well last night, and sweat freely; swelling and exudation disappearing rapidly. Advised a continuance of the remedies for a few days longer, and discharged him.

CASE III.—*Sept.* 6*th*, 1864, was called to Nancy W., a stout, healthy looking girl, a sister to Willie, aged nine years, also of good constitution and previous good health, who had been complaining for several days. Yesterday she had a chill, which was followed with fever and sore throat. She had considerable swelling about the angles of the jaw, face, and neck, some fever, skin hot and dry, pulse 100, and quick, and also complained of stiffness and soreness in the muscles of the neck and throat. Upon examination, I found the tonsils swollen, fauces inflamed and covered with diphtheritic exudation. There was more fetor in her case than in the others. I left her quiniæ sulph. grs. xv, Doveri pulv. grs. vj, divided into five powders, with directions that one be taken every four hours; also ten drops of muriated tincture of iron in a tablespoonful of bourbon whiskey every four hours, steam the throat well and frequently with the fumes of strong vinegar and sage, and apply externally the kerosene and salt pork.

Willie was up and around, but very weak.

Sept. 7*th*, 11 *o'clock A.M.*—Nancy decidedly better; rested well last night, sweat freely, and was nearly free from fever; swelling decreasing, exudation less, pulse 94, and slower. Continued same treatment.

Sept. 8*th*, 10 *o'clock A.M.*—Improving in all respects; swelling and exudation nearly disappeared. Advised a continuance of the whiskey and iron for a few days longer, and discharged her.

CASE IV.—*October* 31*st*, 1864, was called to see M. H., a stout German boy, aged nine years, of good constitution and previous good health, and a cousin to the above-reported patients. His parents informed me that he had been very healthy and well up to Sunday, the day previous to my visit, when he first began to be indisposed. They said that he had attended the funeral of an older brother on Saturday, got slightly wet,

and on Sunday complained of being chilly, headache, and sore throat. I found him with high fever, dry skin, swelled face and neck, and difficulty in swallowing, pulse 100 and quick, no appetite. Upon inspecting the mouth and throat, I found the tonsils swelled and inflamed, and studded with points of diphtheritic exudation; no fetor. Complained of a good deal of stiffness and soreness in the muscles of the neck and throat. I left him quiniæ sulph. grs. xv, Doveri pulv. grs. vj, divided into five powders, and ordered one to be given every four hours; also fifteen drops of the muriated tincture of iron every four hours, steam the throat thoroughly with fumes of strong vinegar and sage, and externally apply the kerosene and salt pork.

Nov. 1*st*, 9 *o'clock A.M.*—Patient no better. The swelling externally had increased decidedly, respiration labored, deglutition quite difficult, tonsils and uvula completely covered with exudation, pulse 110, quick but weaker. Washed the throat with the kreosote mixture, and continued the other treatment, adding a tablespoonful of bourbon whiskey every two hours.

Nov. 2*d*, 10 *o'clock A.M.*—No better; all the symptoms seemed aggravated. Swelling extensive, the mouth and throat literally filled with dirty-looking exudation, respiration and deglutition difficult, no fetor, skin cool, pulse 120 per minute, quick and feeble. He had taken everything but the whiskey, and had such an aversion to it that they could not get him to take it at all. Removed as much of the exudation as I could. The surface below the membrane looked blue, and bled freely, in consequence of which I made a solution of the persulphate of iron, and washed the throat freely with it. Continued the other treatment, and added fifteen drops of the syrup of the iodide of iron once in four hours, in place of the whiskey.

Nov. 3*d*, 10 *o'clock A.M.*—M. alive, but failing. Neck, face, and throat enormously swollen, respiration very difficult, deglutition almost impossible, a large portion of all fluids are rejected through the naries, roof of mouth, tonsils, uvula, and fauces thickly covered with ragged, filthy-looking membrane, no fetor. The patient had a peculiar, *sallow, lifeless, tallowy look.* Skin cool and dry. When he coughs or strangles, he

throws up large pieces or chunks of membrane and flesh. Pulse 125 per minute, quick, and very feeble. They had attempted to give him the whiskey, but it strangled him, and they had to desist. I advised them to wrap him up in warm flannels, and make him as comfortable as circumstances would admit.

Nov. 4th, 10 *o'clock A.M.*—M. died last night, about 11 o'clock.

CASE V.—*November 2d.*—Had my attention called to Levi, a brother of M., aged 5 years, of good constitution, and previous good health, who had been complaining for several days; had a chill that morning, and had considerable fever and complained of sore throat. Pulse rapid; skin dry and hot. Upon examining the mouth and throat, I found his tonsils swollen and inflamed, but no exudation. I left him quiniæ sulph. grs. xij, Doveri pulvis, grs. iij, divided into six powders; one to be given every four hours. Also, ten drops of muriated tincture of iron every four hours. Ordered them to steam his throat freely with the fumes of strong vinegar and sage. Applied the kerosene and salt pork to the neck.

November 3d, 10 *o'clock A.M.*—Levi about the same. There was rather more swelling about the face and neck, and he now complained of stiffness and soreness of the muscles of the neck and throat. The tonsils were studded with points of exudation; no fetor. Brushed his tonsils and throat with a solution of the persulphate of iron; continued the other treatment, and added a tablespoonful of bourbon whiskey every two hours.

November 4th, 10 *o'clock A.M.*—Levi not so well; passed a bad night; I think probably he had been neglected somewhat in consequence of his brother's dying, and the friends having been engaged with him. The swelling about his face and neck had increased; respiration labored; deglutition difficult and painful; tonsils and roof of mouth well covered with membrane. Pulse, 115 per minute, and quick; skin cool, but dry; no fetor. Continued treatment.

November 5th, 10 *o'clock A.M.*—Levi about the same; swelling full as much; pulse 125, quick and feeble; respiration labored; deglutition very painful; exudation profuse, and began

to peel off in large pieces; no fetor. The surface where the exudation peeled off looked pale and blue, and bleeds upon the slightest touch; he complained of being very tired; skin cool, and he began to have that pale, sallow, lifeless, tallowy look and expression. He had a great aversion to food, and it required great efforts to get him to take the broths or nourishment. Continued all the former treatment, and added fifteen drops of the syrup of iodine of iron every four hours.

November 6*th*, 10 *o'clock A.M.*—Levi better. There was less swelling and less exudation; pulse 110 per minute, and fuller; respiration improving; sleeps a great deal; bowels regular. Continued treatment.

November 7*th*, 10 *o'clock A.M.*—Levi improving slowly; he looked pale and prostrate; swelling subsiding; exudation decreasing; throat looks pale and flabby; pulse 108; sleeps most of his time; skin cool; bowels regular; washed his throat with the kreosote mixture, and continued other treatment.

Nov. 8*th*, 10 *o'clock A.M.*—Levi improving in all respects. Continued treatment.

November 9*th*, 10 *o'clock A.M.*—Levi doing well; swelling and exudation decreasing; appetite improving a little; still dull and sleepy; skin warmer, and better color; kerosene and pork have blistered the skin from ear to ear; applied a poultice and continued other treatment.

November 10*th*.—Being absent from the city, my friend, Dr. Woodworth, visited Levi for me; he thought him not quite so well; he was thoroughly covered with a peculiar erythematous redness simulating scarlatina rash, so much so that the Doctor apprehended it scarlatina supervening. There was an increased swelling of the tonsils, with redness of the fauces and uvula; there was also a small point of exudation upon the left tonsil, which he touched with the solid nitrate of silver; in consequence of the scarlatina-like appearance, the Doctor ordered him a warm bath, after which he be well rubbed all over with fresh lard; he also recommended that he have the dilute hydrochloric acid. Continued the stimulus and iron.

November 11*th*, 10 *o'clock A.M.*—Levi had a little more fever

than when I saw him last, on the 9th; the redness spoken of by Dr. Woodworth had pretty much disappeared; there was a little more swelling and redness of the tonsils and fauces; no exudation; still sleepy; continued quinæ, iron, and stimulants.

November 12*th*, 10 *o'clock A.M.*—I think Levi improving, but very slowly; he presented a little more color and lifelike appearance; he was very prostrate and sleepy; very little swelling; no exudation; had taken his nourishment more willingly; bowels regular; pulse 103; slower and fuller; throat pale and flabby. Continued treatment.

November 15*th*, 10 *o'clock A.M.*—Levi doing well; continued treatment. This patient continued to improve, and finally got about after a very protracted convalescence.

CASE VI.—*November* 7*th*, 1864, was requested to examine Louisa, a fleshy little girl aged one year and four months; sister to M. and Levi, who had been quite fretful and feverish since yesterday; her mother said that she had never been sick since she was born; I found her with some fever and hot, dry skin; rapid pulse and hurried respiration. Upon inspecting the mouth and throat I found the tonsils swollen and red; fauces dry and red; no exudation; eyes suffused and red; bowels loose; wanted to nurse most of the time; prescribed her quinæ sulph. grs. xij, Doveri pulvis, grs. ij, in six powders, one to be given every four hours; also ten drops muriated tincture of iron every four hours; warm fomentation to the throat and neck.

November 8*th*, 10 *o'clock A.M.*—Louisa very bad; tonsils and fauces badly swollen and thickly covered with a peculiarly filthy looking, closely adhering exudation; respiration hurried; deglutition difficult; face and neck swelled; pulse 130; very quick; cross when moved; refused the breast; continued the quinine and muriated tincture; tried to have her swallow some bourbon whiskey, but it strangled her so that we had to desist; advised wine whey instead; this she retained readily; applied the kerosene and salt pork to the throat and neck, in place of the warm fomentations.

November 9*th*, 10 *o'clock A.M.*—Louisa no better; she looked bad, and began to have that same sallow, lifeless, tallowy ap-

pearance; external swelling extensive; she was now having a profuse discharge of a bloody, acrid matter, from the nostrils, which excoriated the upper lip and cheeks; respiration bad; deglutition very difficult; a large portion of fluids attempted to be swallowed were rejected by the nose; skin shiny and cool; pulse 130 per minute, and feeble; tonsils and fauces covered with nasty, ragged-looking exudation; washed the throat with the kreosote mixture, and continued other treatment; urged them to give her all the wine whey and chicken broth she would retain.

November 10*th*.—Being absent from the city, Dr. Woodworth saw her for me, and reported her failing; he did not deem it advisable to make any change in her treatment.

November 11*th*, 10 *o'clock A.M.*—Louisa no better; looked, and was, very bad; did not discover any particular change since my last visit; I think there was greater prostration. Continued same treatment, and added ten drops of the syrup of the iodide of iron every four hours.

November 12*th*, 10 *o'clock A.M.*—Louisa looked and appeared a little better; she had had a new and more experienced nurse for a day or two, and had been thoroughly cleansed, washed and changed since my last visit, and, as a consequence, looked and appeared improved. There was not quite as much swelling, and I think she swallows more readily; the exudation was still quite profuse, but peeled off easier. I continued same remedies.

November 13*th*, 10 *o'clock A.M.*—Louisa about the same; think she paid more attention to her surroundings; there was not as much exudation; the throat looked pale and flabby; brushed it with the persulphate of iron, and continued same treatment.

November 14*th*, 10 *o'clock A.M.*—Louisa not so well; her nurse left yesterday, and things had returned to their old status. There was no increase of swelling nor exudation; she was sinking from exhaustion; there was a good deal of capillary congestion, with coldness of the extremities and surface; pulse barely perceptable at the wrist; put her into a warm bath and then wrapped her up in hot, dry flannels; substituted the whiskey for the wine. Continued the quinine, iron, and broths.

November 15*th*.—Louisa died last night at 10 o'clock.

CASE VII.—*November* 17*th*, 1864, was called to see David, a brother to Levi and Louisa, aged 11 years, also of good constitution and previous good health. He was taken with a chill in the night, and now had high fever, quick pulse, dry skin, with severe headache; he also complained of stiffness and soreness of the muscles of the neck and throat; considerable pain when swallowing; tonsils were swelled, and red with patches of exudation. Cauterized his throat freely with nitrate of silver, and left him quinæ sulph. grs. xx, pulvis Doveri, grs. vj, divided into six powders, one to be taken every four hours; also 15 drops of muriated tincture of iron, every four hours, in two tablespoonfuls of bourbon whiskey; steam the throat often and thoroughly with the fumes of strong vinegar and sage; rub the skin well with kerosene, and then apply a thin slice of salt pork about the neck.

November 18*th*, 10 *o'clock A.M.*—David decidedly worse; neck and face badly swollen; skin not so hot, but dry; pulse 110, quick and full; tonsils and fauces thoroughly covered with thick, bad looking and closely adhering exudation; he insisted that his throat had pained him more, and that he had had much more difficulty in swallowing ever since I cauterized it, yesterday; the kerosene and salt pork were bringing out a full eruption about the neck; pulse 120 per minute and very quick; respiration labored; deglutition quite difficult and painful; the exudation was very tough and closely adherent. Washed his throat with the kreosote mixture and continued the other treatment.

November 19*th*, 10 *o'clock A.M.*—David no better. Looked and felt bad that morning. Had that same sallow, sad, lifeless, tallowy look, skin was dusky and shining, similar to what we frequently see in low forms of pyemia, neck and face badly swollen, respiration quick and labored, deglutition difficult and painful, mouth and throat full of membrane, which could be peeled off quite readily in large flakes or pieces. The membrane had a peculiar dark and disorganized appearance, was very brittle. No fetor. Pulse 130, quick and feeble. The throat, where the membrane

peeled off, was of a pale blue, and flabby appearance. The tonsils and fauces bled quite freely upon the slightest touch. After removing as much of the exudation as I could conveniently, I washed his throat with the dilute persulphate of iron, ordered two tablespoonfuls of bourbon whiskey every two hours, and continued the other remedies.

November 20*th*, 10 *o'clock A.M.*—David was covered all over with a peculiar erythematous redness, simulating at least scarlatina rash. He was as red as scarlet. There was no augmentation of heat. Pulse 126, slower and fuller. Swelling about neck and face subsiding—kerosene and pork had blistered him from ear to ear—respiration slower and easier, deglutition less painful, exudation not so profuse, throat and roof of mouth pale, and ragged looking. Washed them with the kreosote mixture, substituted warm poultices for the kerosene and pork, and continued the other treatment.

November 21*st*, 10 *o'clock A.M.*—David better. Redness disappearing. He looked and appeared decidedly better. Swelling subsiding rapidly, skin cool, soft, and moist. Pulse 100, and fuller. Exudation less, respiration and deglutition improved. He complained of being tired. Added 15 drops of the syrup of iodide of iron; continued treatment.

November 22*d.*—David improving finely. Redness all gone, skin moist and soft, swelling pretty much gone, no exudation, respiration and deglutition good. Reduced the quantity of whiskey one half, and continued other medicines.

November 24*th*, 2 *o'clock P.M.*—David doing finely. Bolstered up in bed, enjoying himself. Pulse 96, soft and regular. Appetite improving, bowels regular. I advised a continuance of the medicines in reduced quantities, and at longer intervals, for several days, and left him. I have seen his father frequently since, and learned from him that David finally got up and around, after a very slow and protracted convalescence.

Case VIII.—*November* 12*th*, 1864.—Was called to see Betsy H., a medium sized, well developed German girl, aged 16 years, a cousin to the above described patients, who attended the funeral of M——, on the 6th, a cold, rainy day. The services

were held at the house, and she was in the house during the same, and then, in going from the house to the grave, and thence home, she became very cold and wet. She had been quite indisposed ever since. Yesterday she had a hard chill, followed with considerable fever. That morning she complained of headache, and sore throat, so I was sent for. I found her with high fever, flushed countenance, dry skin, stiffness and soreness in the muscles of the neck and throat, and some difficulty in swallowing. Upon inspecting the mouth and throat, I found the tonsils and fauces swollen, red, and covered with minute points of diphtheritic exudation. Pulse 100, quick and full, bowels regular. I washed her throat with the kreosote mixture, and left her quinæ sulph. grs. xxx, Doveri pulvis, grs. x, divided into five powders, and ordered that one be given every three hours; also two tablespoonfuls of bourbon whiskey and twenty drops of muriated tincture of iron every four hours; steam the throat with fumes of strong vinegar and sage, rub the skin about the neck thoroughly with kerosene, and then apply a thin slice of salt pork around the neck. Made her a weak solution of persulphate of iron to use as a gargle.

November 13*th*, 2 *o'clock P.M.*—Betsy is better. Her folks are very intelligent, and her mother an excellent nurse, who had followed all the directions to the letter, and, in consequence, her daughter was much better. Swelling about the neck and face less, fever abating, and she had less soreness and stiffness of the muscles of the neck, less difficulty in swallowing. There was an increased amount of exudation, but it was thin, and rubbed off quite readily. Pulse 96 per minute, full and soft. Washed her throat again with the kreosote mixture, and continued the other medicines.

November 14*th*, 2 *o'clock P.M.*—Betsy much better. Swelling about face and neck pretty nearly disappeared, swelling and redness of tonsils subsiding rapidly. Pulse 90, soft and full. Advised her to continue the medicines a day or two longer, and discharged her.

Although this patient recovered from the diphtheritic attack so readily, her health has been very poor ever since. She com-

plains of extreme prostration, and great want of energy. Her catamenia have not made their appearance, although two periods have passed since. She looks quite pale and exsanguinated, and is still taking tonics and iron.

Case IX.—*November* 18*th*, 1864.—Was called to see Willie H——, a stout chunk of a German boy, aged 8 years, a brother to Betsy. He had not had any distinct chill, that they were aware of, but had complained a day or two of stiffness and soreness in the muscles of his neck. To-day, he seemed quite indisposed, and said that he could not swallow. Upon inspecting his mouth and throat, I found the tonsils and uvula swollen, and very red, and the left tonsil was well covered with diphtheritic exudation. Pulse 98, slow and full. Respiration normal, deglutition somewhat difficult and painful, bowels constipated. Washed the throat well with the kreosote mixture, and left him quinæ sulph. grs. xv, Doveri pulvis, grs. v, divided into four powders, one to be given every four hours; also a tablespoonful of bourbon whiskey, and ten drops of muriated tincture of iron, every four hours. Steam the throat well and often with the fumes of strong vinegar and sage, and apply the kerosene and salt pork externally to the neck, and left him a dilute solution of the persulphate of iron to use as a gargle.

November 19*th*, 3 *o'clock P.M.*—Willie better. There was but little external swelling. The tonsils were enlarged and red, and the left one covered to a considerable extent with exudation. Pulse 92 per minute, soft and full. Skin warm and moist, bowels moved twice since my last visit. He had but little thirst, no appetite, respiration easy, deglutition painful. He still complained of a good deal of soreness and stiffness of the neck. Notwithstanding the apparent mildness of the symptoms in this case, there was great muscular prostration, and much more fetor than in either of the above cases. Washed his throat with the kreosote mixture, and continued the other treatment.

November 20*th*, 3 *o'clock P.M.*—Willie was decidedly better. Found him bolstered up in a rocking-chair. Swelling and redness of tonsils subsiding, exudation mostly disappeared, no fever,

appetite improving, bowels regular, skin soft, warm, and moist. Pulse 76, full and soft. Advised a continuance of the medicines in reduced quantities, and at longer intervals, for a few days more, and discharged him. This patient, notwithstanding the mildness of his attack, had a slow and protracted convalescence.

CASE X.—*November 22d*, 1864.—Was called to see Ellen, a stout, healthy looking German girl, aged 12 years, and a sister to Betsy and Willie, who had been complaining for several days of soreness and lameness all over her. Last night she had a slight chill, which was followed by fever, headache, and sore throat. I found her with fever, dry hot skin, and slight swelling about the angles of the jaw, face, and neck. Upon examing her throat, I found it inflamed, tonsils swelled, red, and studded with patches of diphtheritic exudation. Pulse 90 per minute, quick and full. Respiration normal, deglutition considerably painful, bowels have not moved in two days. Brushed her throat freely with the kreosote mixture, and left her quinæ sulph. grs. xx, Doveri pulvis, grs. x, divided into five powders, one every four hours; also two tablespoonfuls of bourbon whiskey and fifteen drops muriated tincture of iron every four hours. Steam her throat thoroughly with the fumes of strong vinegar and sage. Also left her a weak solution of persulphate of iron, to use as a gargle. Apply the kerosene and salt pork to the neck.

November 23d, 10 *o'clock A.M.*—Ellen decidedly better. Swelling of face and neck less, no fever, sweat freely last night. Pulse 86 per minute, slower and softer. Skin warm and moist, swelling of tonsils subsiding, exudation nearly disappeared, respiration normal, deglutition easy. Washed the throat with the kreosote mixture, and advised the continuance of the medicines for a day or two longer, and discharged her. This patient made a rapid and perfect recovery.

CASE XI.—*November 10th*, 1864.—Was called to see Mariah, another stout, healthy looking German girl, aged 8 years, of good constitution and previous good health. The mother informed me that this girl had been out several days in succession, husking corn, while the weather was very cold, and that

she had become very cold and thoroughly chilled. At first she complained of a great deal of stiffness of her limbs, and soreness of the muscles all over her. For two days she had had headache, with stiff neck, and difficulty in swallowing. Her mother said that she had not noticed that she had had much fever. Bowels had been regular, and appetite pretty good. She said that she did not think her girl very sick, but thought, as I was passing by, she would call me in and have me see her. Upon inspecting her throat and mouth, I found the tonsils moderately swollen and inflamed, fauces red and dry. Upon the posterior surface of the right tonsil I found a sort of fissure, or ulcer, I should think half an inch long by several lines in breadth, which looked like a sort of indulent ulcer, and was covered and filled with diphtheritic exudation. There were also several other minute points of exudation surrounding this fissure upon the right tonsil. No fetor. Pulse quiet, and 82 to the minute. I cauterized the ulcer-like looking fissure with the solid nitrate of silver, and ordered that she steam her throat freely with the fumes of strong vinegar and sage, and that she gargle it thoroughly and often with a saturated solution of chlorate of potassa. Applied the kerosene and salt pork, and left her quinæ sulph. grs. xv, Doveri pulvis, grs. vj, divided into five powders, with orders that one be given every four hours.

November 11*th*, 11 *o'clock A.M.*—Found Mariah sitting up in the rocking-chair by the stove, feeling much better. Had slept well during the night, and sweat freely. Throat looked better, ulcered fissure looked cleaner and healthier; cauterized it again, and advised a continuance of the gargle, and occasional steaming. Repeated the quinine and Dover's powders, recommended that she be kept in the house and warm, and discharged her.

November 18*th*, 11 *o'clock A.M.*—Was called again to see Mariah. Found her in bed, face flushed, skin dry and hot, eyes suffused, and face and neck moderately swollen. Her mother informed me that after my last visit she improved, and they thought her entirely well until the day previous, when she began to complain of being chilly, and her head aching. She had been restless all night, and that morning complained of stiffness

and soreness of her neck and throat. Upon inspecting her mouth and throat, I found the left tonsil and a portion of the left side of the roof of the mouth up to, and around, the uvula thickly covered with tough, nasty looking, closely adhering diphtheritic exudation. No fetor, respiration a little hurried, deglutition painful. Pulse 105 per minute, quick and jerking. The right tonsil was but little swelled, and the fissure entirely healed, no exudation upon it. Washed her throat with the kreosote mixture, ordered it steamed with the vinegar and sage, and gargled with a weak solution of the persulphate of iron. Applied the kerosene and salt pork, and left her quinæ sulph. grs. xv, Doveri pulvis, grs. vj, divided into five powders, with orders that she take one every four hours; also 15 drops of muriated tincture of iron in a tablespoonful of bourbon whiskey every four hours.

November 19*th*, 11 *o'clock A.M.*—Mariah no better. Looked and felt bad. Rested but little during the night. Considerable fever. Pulse 115 per minute, quick and irritable. Extensive swelling of the left side of the face and neck, skin dry, hot, and rough. Had considerable thirst, and a portion of the fluids attempted to be swallowed were rejected through the nose. Left side of throat, and posterior portion of left side of mouth were filled with bad looking exudation, which began to peel off a little. No fetor. She complained of feeling very tired and prostrate. No appetite. Removed as much of the exudation as I could, and washed the throat with the kreosote mixture, increased the whiskey to two tablespoonfuls every four hours, and continued the other treatment.

November 20*th*, 11 *o'clock A.M.*—Mariah no better. Swelling externally increasing. Kerosene and pork had caused a free pustulation. Respiration and deglutition difficult and painful in consequence of the extreme swelling. There was less heat of skin, but she began to show that same sallow, lifeless, tallowy appearance. Pulse 130 per minute, quick but feeble. Left tonsil and left side of mouth and throat still badly swollen, and thickly covered with dry, dark looking exudation. The exudation was dark colored and brittle, which peeled off in thick

chunks. No fetor. Surface beneath the exudation pale blue, and bled quite freely. Removed as much of the membrane as I could conveniently, and then washed the throat with the persulphate of iron solution. Ordered the whiskey to be given every two hours, and added fifteen drops of the syrup of iodide of iron every four hours.

November 21*st*, 11 *o'clock A.M.*—Mariah about the same in all respects. Continued treatment.

November 22*d*, 11 *o'clock A.M.*—Mariah full as well. I think the swelling has subsided a little, and perhaps she swallowed a little easier. Pulse 132 and feeble; skin cool and blue; not much thirst. Bowels had moved twice since my last visit. Exudation a little diminished, but looked ragged and bad. No fetor. She had a peculiar abhorrence for chicken broth and beef tea, therefore, we had to feed her on milk porridge and gruel. Continued treatment.

November 23*d*, 11 *o'clock A.M.*—Mariah about the same; she seemed to be holding her own remarkably well. No increase of swelling; exudation less, and I think her throat looked better. The kerosene and pork had blistered her freely, therefore, we omitted them, and applied a warm poultice in their stead. Continued the other treatment.

Nov. 24*th*, 11 *o'clock A.M.*—Mariah looked and felt better; slept pretty well during the night; skin warmer and better color; no fever; pulse 128 per minute, and very feeble; respiration and deglutition improving; takes her food more readily; throat looked better; there was still considerable exudation, but it looked better. Continued all the treatment ordered at my last visit.

November 25*th*, 11 *o'clock A.M.*—Mariah improving; swelling was subsiding rapidly, and she was better in all respects. Continued treatment.

November 26*th*, 11 *o'clock A.M.*—Mariah still improving nicely. Continued treatment.

November 27*th*, 2 *o'clock P.M.*—Found Mariah quite comfortable; had rested well, and looked and appeared bright; no fever; skin soft and moist; pulse 98, slow and full; swelling

about the face and neck nearly gone; exudation pretty much disappeared; throat pale, ragged, and flabby; appetite improving; washed the throat with the kreosote mixture; and continued the other treatment.

November 28th, 5 o'clock A.M.—Was summoned to visit Mariah, in haste, whom the messenger said was bleeding profusely from the mouth and nose. When I arrived at her house, I found things in a terrible plight: washdish, bedchamber, sheets, pillows, and towels all covered and saturated with blood. Her parents informed me that she first began to bleed about nine o'clock in the evening. She bled quite profusely from the nose at first, for a while, and then it stopped. Next she voided her urine, and it was mixed with blood; next she went to stool, and passed quite a quantity of blood from the bowels; soon thereafter she vomited, and also threw considerable blood from the stomach. She passed blood from the bladder and bowels several times during the night. The bleeding from the nose and mouth recommenced and continued without interruption until my arrival. The night had been an extremely dark and rainy one; the roads were in an almost impassable condition; and they residing eight miles from the city, did not send for me until daylight in the morning, when I found things as above described.

Mariah was lying among the bloody goods, pulseless at the wrist, very pale, bloodless, and faint. She could not articulate above a whisper, and complained of being very faint. She insisted that she must go to stool, but the least effort to move her, or place her upon the bedpan, would cause her to faint and convulse. I immediately brushed the throat and nostrils with the persulphate of iron, which arrested the bleeding immediately. I had her wrapped up in hot, dry flannels, and tried to crowd the stimulants, but all to no purpose. She grew extremely restless, and sank and died at 1 o'clock P.M.

The blood in the vessels, when I arrived, was in a fluid state. There was no effort at coagulation; it was very thin and dark colored, and remained so. There seemed to be an entire disorganization of the blood, and it oozed from all the mucous

membranes; even the tears from the eyes were mixed with blood, and stained the towels and clothes. This is the only case that I have ever met of such extreme bleeding. I heard of one other, and that occurred in the Spring, in a boy five years old, belonging to the nearest neighbors of this same family. The father of the boy was there, and said that his boy had acted and died very much as this girl had.

Remarks.—It seems to me there can no longer be any question of its being a constitutional, or blood disease. I regard it as a zymotic disease of an adynamic or asthenic character, whose poison is most acutely debilitating, and seems to destroy or arrest that peculiar stimulus so necessary to excite and perpetuate the various vital phenomena, with a peculiar predisposition to local manifestations. This local manifestation, or exudation, I regard as an adventitious tissue pathognomonic of, and a consequence of the disease. It is most liable to occur in young persons—that period of life when the nutritive function gives a preponderance to the protien constituents of the blood, and inflammations which are so commonly attended with effusions of plastic or albuminous matter occur—hence its predisposition to this peculiar exudation. I say the natural tendency of the age is inclined to plastic effusions or exudations, but the disease in diphtheria has changed the blood so that its products have become aplastic, and, consequently, we have an alkaline and aplastic condition of the system. Is diphtheria a contagious or an infectious disease? This, I regret to say, is still an unsettled question. Leading minds in our profession differ widely upon this point. I have always regarded it as infectious. I am still of that opinion. There is no doubt to my mind but what the disease has been, and can be, communicated under certain circumstances. These circumstances are a continued or oft-repeated exposure in an illy-ventilated apartment where the air is humid, and it and the apartment thoroughly impregnated with the exhalations of the sick. Indeed, it is well known that no circumstance operates more extensively in favoring the speed, or in increasing the virulence and malignancy of all contagious or infectious diseases, than an impure and humid atmos-

phere. Its debilitating influences predispose to zymotic disease. It effects this in two ways. In the first place, it weakens the body, and thus acts as a true predisposing cause. And, in the second place, it leads to the concentration and increased virulence of the poison itself—not only by its general depressing agency, but also by impairing the condition of the blood itself, and by increasing in it the quantity of azotized matter in an incipient stage of corruption, which serves as a convenient nidus for the propagation of the diphtheritic poison. Again, upon the other hand, where the apartments are dry, well-warmed, ventilated, and kept rigidly clean, we have those poisonous emanations and exhalations so diluted and destroyed by the fresh and pure atmosphere that the danger of communicating or contracting the disease is materially lessened. This I deem an important consideration in the management of this disease, and one that well merits the early attention of the medical attendant. I cannot help but think that if this all important hygienic measure was rigidly enforced and thoroughly explained to patients, their friends, and the public, we should largely reduce the percentage of mortality in this disorder.

In all these cases, the predisposing causes must be referred to a morbific poison already present in the system—either accidental or congenital.

I think I have now fully stated my views of its predisposing causes. What the exciting causes are, I think is not so well understood nor clearly demonstrated. Experience has proved them liable to become operative at all times and under almost all circumstances. I have no doubt of their being endemic and extrinsic.

TREATMENT.—Few diseases, I apprehend, have been subjected to as many modes and varieties of treatment as diphtheria. Many prominent and worthy practitioners of medicine regard it as a local disease, requiring local treatment only. This class again divide, and differ widely in the selection of their remedies. Another class, equally prominent, intelligent, and worthy, regard it as a constitutional disease, requiring constitutional treatment. But they too differ equally as much in the selection

of their remedies. This speculation and difference of opinion convinces me that the pathology of the disease is not fully understood, and that, as yet, no certain specifics have been found with which to arrest the disease. My notions are that the first class of the above-named physicians are greatly in error, and must of necessity be unsuccessful in their efforts and practice, so long as they regard and treat it as a local disorder. I fear, also, that many even of those who recognize the disease as a general or constitutional disease, still pay too much regard to the local complication, and treat the consequence more than the disease.

I am not satisfied that my patients have derived much benefit from local applications to the throat in diphtheria. When the local difficulty is excessive, and there is a tendency to, or danger of, sloughing and gangrene, then, of course, we should be on the lookout, and prevent such a result if possible. However, this condition of things I regard as quite unusual and accidental, and to be avoided by other and constitutional means. Of the various remedies recommended and made use of, I have been better satisfied with the effects of the alcoholic solution of kreosote than with any other article that I have used. I think its antiseptic properties recommend it peculiarly to correct the septic tendency of this condition, while its stimulating qualities give tone to the tissues, and prevent them from sloughing. Where the sloughing has already commenced, and the parts are pale, ragged, and flabby, I have used a solution of the persulphate of iron, and have been highly pleased with its effects. It is a powerfully tonic astringent, and as such constringes and hardens the tissues, reduces the swelling, lessens the effusion, and arrests the inflammatory tendency.

Nitrate of silver has not proved of service in my cases. *I am satisfied that severe cauterizations with nitrate of silver, or other caustics, in diphtheria, do more harm than good.* Such has been my experience.

Counter-Irritation.—Notwithstanding the great weight and majority of authorities are against the use of counter-irritants in diphtheria, I am in the habit of resorting to them early,

and am convinced that my patients are benefited by mild and continued counter-irritation about the neck, and over the upper part of the chest. I think they act as revulsives, and detract or divert from the internal local tendency. I have never used cantharides, nor any of the other more powerful vesicating counter-irritants. I think that stimulating liniments and applications are preferable. I have generally made use of kerosene to rub the skin with, and applied a thin slice of bacon or salt pork. They are usually convenient, and generally ready at hand in every house—and I have been well pleased with their action and effects. They are always mild but certain, and I have never known them to prove painful, nor very annoying to the patient. They always produce a free pustular eruption, and I have never known any bad effects to follow their use in diphtheria.

GENERAL OR CONSTITUTIONAL TREATMENT.—What should it consist of? That is the question! Let us examine for a moment what the indications are. What lesion have we to remedy? We have decided that the disease is a blood disease of an undoubted adynamic and asthenic character. Its first decided impression, in all severe and malignant cases, is upon the nervous centres, as is denoted by the general depression of all the vital phenomena of life. Next, we have a poisoned condition of the blood, which is increased as the disease advances, as is shown by the vascular prostration and excitement of the circulation. The rapid, quick pulse indicates that nature is putting forth an extra effort to rid the economy of the poison. In many of the milder cases she succeeds unaided, but in many of the severer and more malignant cases she fails for the want of power. Nature is exhausted. The depressed condition of the nervous system, and the poisoned condition of the blood have absorbed and used up the vital stimuli necessary to excite and perpetuate the animal functions, and the patient sinks and dies from exhaustion—dies for the want of steam and power to propel the machinery of life. Now, what are the indications? What is to be done? How is the catastrophe to be avoided? Most obviously by eliminating the poison and supplying the material for

steam and power. What does that material consist of, and where is it to be sought? I answer among the tonics, stimulants, and nutriments. The next question, then, is what articles of the materia medica offer the greatest inducements? Which contain the greatest number of the above requirements? I cannot think of any one article that offers so great inducements as alcohol and its preparations. It ranks as chief among the general stimulants; under its influence the heart and arteries pulsate more strongly, the capillaries become distended with red blood, the animal temperature is raised, and all the functions, but those of the nervous system in particular, are rendered more active. But the benefits of alcoholic medicines are not limited to their stimulant influence. They are also food, according to the present chemical doctrines, in the sense that they restrict the waste of the body, and therefore indirectly sustain the strength, that is to say, they contain and afford a large quantity of hydrogen, with which the inspired oxygen combines instead of with the tissues themselves. They are also absorbed and enter the blood itself, and are thus carried everywhere through the system to arouse the dormant powers, excite a craving for food, quicken its digestion, promote its assimilation, and thus become, as it were, purveyors to the nutrition of all the organs. Therefore I claim it to be peculiarly adapted to the treatment of these low and malignant cases of diphtheria. Of the many alcoholic preparations, I have preferred and used the bourbon whiskey. I have commenced its use early in the disease, and continued it in large doses for days in succession, as I think, with the happiest results. I think it should be given in quantities sufficient to make and maintain a decided impression on the system. Not sufficient to produce a sedative effect, but enough to stimulate and keep up the functions and hold them firm until the poison can be eliminated and thrown off. It will be noticed that of the eleven cases above reported, nine took whiskey largely through their entire sickness. Eight of the nine recovered. The ninth was improving decidedly and rapidly, when the hemorrhage of which she died occurred. I have every reason to believe that she too would have recovered, had not the hemorrhage occurred.

Two of the eleven took no whiskey, and both died. I do not think that the disease in their cases was any more severe or malignant in its commencement than in the others. Their surroundings also were the same. They all occurred in one neighborhood, covering a space of country two miles in width by six miles in length. Their parents were all prairie farmers. The land is low, and has a clay and loam subsoil. In ordinary, and in wet seasons a considerable portion of the prairie is covered with water; but the past season having been a very dry one in this section, their farms were dry, and they had an unusual growth of vegetation.

Mr. President and Gentlemen, although one of the leading ideas of this article is to suggest the adaptation, and urge the utility of whiskey in diphtheria, I must not be misunderstood as relying upon it alone. I understand too well the qualities and benefits of sulphate of quiniæ, muriated tincture of iron, hydrochlroic acid, and the iodide of iron, in all this class of diseases, to reject them in diphtheria. They are all entitled to our utmost confidence, and should be early and energetically administered in this disease—both as prophylactics and curatives. I say, give plenty of fresh, dry air; bourbon whiskey, largely; quiniæ; muriated tincture of iron; hydrochloric acid; iodide of iron, with the best of nourishment internally; with mild but continued counter-irritation externally; *cleanliness imperative.*

ARTICLE II.

RECENT ADVANCES IN THE SCIENCE OF LIGHT.

By J. S. JEWELL, M.D., Prof. Anatomy in Chicago Medical College.

The advance from a material to a phenominal or wave theory of light, was perhaps the most signal in the history of optics. In this respect the science of light has kept pace with the new views and generalizations which have from time to time prevailed, concerning force and motion. The admission that light

is not a kind of matter but a kind of motion, opened up a new field for, and gave a new direction, to research.

Some of the advances, in the past few years, of our knowledge of the nature and relations of light are so novel and seem to open such a promising field to chemistry and physics, and are likely to prove of such signal practical value to the chemist and physicist, that it may not be improper, in a short article, to collect and exhibit briefly the results of modern research in this direction. In order to do this intelligibly, it will be needful to go back a little and notice the successive steps in the march of discovery. The account I shall subjoin is taken from various sources, as from notices and papers in scientific works, periodicals and foreign reviews, &c.:—

In 1675, NEWTON presented to the Royal Society his memorable treatise on optics. In this paper was detailed his discovery of the solar spectrum, and the singular fact of the compound nature of light, and the colored bands which, in invariable order, traverse the spectrum.

The spectrum was reëxamined by that singularly ingenious experimenter, Dr. WOLLISTON. "It was in 1802, that he, by preventing the overlapping of the colored bands so they should not interfere with each other, discovered that great pecularity in solar light, which in later times has led to such astounding discoveries in the sun itself." He observed when light was passed through a narrow slit and afterwards permitted to fall on the prism, that the spectrum produced was traversed by certain dark bands, of which WOLLISTON counted only seven. The bands seemed as shadows on an otherwise luminous background.

It is, however, to the great German optician, FRAUNHOFER, we are indebted for the first careful examination of these lines. By superior arrangements, he was enabled to discover a far greater number than HOLLASTON had. He counted no less than 500 between the violet and the red, in the spectrum, and in 1815, produced a beautiful map of them. The principal lines he designated by the letters of the alphabet, hence the expression Fraunhofer's line, A, D, &c.

FRAUNHOFER made careful measurements of these lines, and

found them invariably to occupy the same relative position, whether he employed direct solar light, or reflected light from the Moon or Venus. But he observed this singular fact:—In the spectra of the fixed stars, the lines did not coincide with those observed in the solar spectrum. At this early period he reached the conclusion, that the cause for this change in the spectra must be caused by, and reveal some difference in, the constitution of the bodies remitting the light. But the discovery of the wonderful import of these lines was reserved for others.

This branch of science was much advanced by the labors of HERSCHEL, who was able to distinguish some of the metals by their spectra. In 1826, TALBOT, from an examination of certain parts of the spectra of several metals, was led to express an opinion that "if this difference of spectra should be found to be correct, and applicable to the other rays, a glance at the prismatic spectrum of a flame may show it to contain substances which it would otherwise require a laborious chemical analysis to effect." In 1834, he described the spectra of strontium and lithium, and declared his ability, by this means, to detect the minutest portions of these substances.

Prof. STOKES, in his admirable reseaches on fluorescence, showed that similar dark lines exist beyond the violet, requiring special arrangements to render them visible. Some 2000 of these dark lines have been mapped by Sir DAVID BREWSTER and Dr. GLADSTONE, in that part of the spectrum between the red and violet.

This line of research was conducted still farther by Mr. W. H. MILLER, DANIEL and Prof. WHEATSONE. Prof. DRAPER, between the years of 1843 and 1848 published a series of papers on this subject, in which was detailed the results of his own valuable researches.

That both simple and compound bodies may give lines in the spectrum, and that two simple substances which do not singly produce them may in their compounds, and that the vapors of simple substances may exhibit lines while they disappear in their compounds, together with other facts, were shown in 1845, by

W. A. Miller. Foucault, in 1849, observed when he permitted sunlight to fall on the voltaic ark, and then viewed this compound light through a prism, that the usual double brilliant line of the electric light corresponded exactly with the double black line in solar light, and when they were permitted to overlap the dark solar lines unexpectedly became more distinct as dark lines.

Though these facts, with others of like kind, materially advanced our knowledge of the spectrum, they constitute only the prelude to the most important researches in their bearings on the progress of physical and chemical science which have been made perhaps in modern times.

The Prof. of physics at the University of Heidelberg, taking up the thread where it had been dropped by earlier observers, has been conducted to the most singular and beautiful discoveries.

The labors of Masson, who examined the spectra of various metals employed as dischargers to Leyden jars, and of Angstrom, who showed that from the intense heat of the electric current he was able to discern two spectra—one due to the metal, the other to the atmosphere itself, and of Van. Der. Willinger, and Maxwell, the latter of whom undertook experiments to determine the wave lengths of different kinds of light, and also of Plucker, who examined the spectra of the electric current in rarified gases and vapors, should be considered as contributing to the signal advance in this department of science, in which Kirchoff, and his coworker Bunson, have rendered their names immortal, a short account of which will follow.

The instrument employed by these observers, consisted of several prisms of the finest workmanship, arranged in particular order one after another, by which means they obtain great dispersive power, and were enabled to magnify to a very great extent the primary spectrum, the lines were examined by means of a telescope, several feet distant, magnifying about 40 times, the whole instrument was arranged with admirable precision and revealed spectral phenomena, to the beauty of which there is said to be scarcely a parallel.

The purpose of KIRCHOFF was to measure the absolute and relative width of the dark lines, and intervals between the lines crossing the spectrum; also to determine the depth or range of shade or color, and faithfully to delineate them on a map which he set himself to produce.

In all the respects named, the lines were found to differ in different parts of the spectrum—in width and in intensity of color. The measurements were made by cross wires in the instrument, and with surpassing accuracy. The shades representing the lines were laid on the maps in India ink, with almost infinite trouble, as we may well suppose, when we learn that though years were employed in its construction, it only includes about one-third of the spectrum between the violet and red, and entailed the almost total loss of vision in the indefatigable observer.

But before we shall be able to understand how the solar spectrum can teach us anything of the chemical constitution of the solar atmosphere, we must look in another direction a few moments, and see how the constitution of terrestrial matter can be determined by an examination of the light different kinds of matter, when heated, emits.

That different kinds of matter, when heated, emit light of peculiar kinds, has been long known. This fact has been applied in many ways to pyrotechny; and the tint communicated to the blowpipe flame has been employed as a means of distinguishing substances one from another. This fact, until recently, was known to hold good for only a few substances, but is now known, or believed, to hold good for all elementary substances. This fact is made the basis of one of the most beautiful and useful additions to chemistry, of modern times, viz.: spectrum analysis. This kind of analysis is made independently of the ordinary appliances of chemistry, It only requires that the substance to be examined shall be in a state of luminous gas or vapor, that it may emit its peculiar light. That it is possible to bring all substances into this state is a matter of experiment. The ways in which this is accomplished are various, but for most substances it is only necessary to place a small portion of one

of their readily decomposable compounds in the flame of a spirit lamp or a gas jet. The compound volatilizes, and while in the gaseous state is heated in the flame till luminous. But other means for the metals fused with difficulty, and for the permanent gases, is necessary, and will be alluded to as we proceed.

Now, the fact that the light emitted from various substances is different, cannot usually be perceived by the eye alone. To determine this we must examine their spectra. The same kind of instrument will be required for this, as already referred to, for exhibition of the solar spectrum. There only is it, that each substance writes down the unalterable law of its relations to matter in the brilliant language of the spectrum.

To examine the spectra of all chemical elements, was a work begun several years since by BUNSEN and KIRCHOFF, and the results which they have obtained bid fair to revolutionize, in important respects, analytical chemistry.

All who have paid the slightest attention to qualitative analysis, will remember what a bewildering series of tests, re-agents, solutions, &c., are frequently required to establish the identity of a substance, but in the analysis of their spectra, the case is entirely different.

The instrument being arranged, we place before it the flame of a lamp or burner, and in it place one of the easily decomposable compounds of a metal, say cloride of sodium, and then with the telescope observe the spectrum. In the case supposed we should find a couple of bright yellow lines close together, and the remainder of the spectrum perfectly dark, this is the invariable appearence of sodium, and so minute is the quantity required as to appear incredible, if the delicacy of this test was not shown by experiment. So minute a quantity as the $_{180,000,000,000}$th of a grain will yield the characteristic spectrum. After reading this we will learn without any surprise, it has been found that common salt exists in a finely divided state all through the air. This statement, taken with other collateral ones, suggest some interesting reflections, as to the possible floating contents of the atmosphere. But suppose we introduce into the flame a potassium compound. The flame will instantly acquire a purple tint,

and the spectrum will be observed as a central white portion, bounded at one end by a violet band and at the other by a red band. So too with all the metals, they have their peculiar spectra, invariable under the same conditions, and the person acquainted with their characteristic appearances can instantly recognize them. Of the surpassing beauty of the phenomena of this branch of science, no adequate conception can be formed it is said.

Prof. BUNSEN thus describes what he witnessed when he had placed a mixture of many metals in the flame:—"I took a mixture consisting of the chloride of lithium, chloride of sodium, calcium, strontium, barium, &c., containing at most the $\frac{1}{1000}$th of a grain of each substance. This mixture I placed in the flame and observed the result. First, the intense yellow sodium lines appeared on a background of pale continuous spectrum. As these began to be less distinct, the pale potassium lines were seen, and then the red lithium line came out, whilst the barium lines came out in all their vividness. The sodium, lithium, potassium, and barium salts were now almost volatilized, and after a few moments the strontium and calcium lines came out as from a dissolving view, gradually attaining their characteristic brightness and form."

If the foregoing remarks be true, it will be unnecessary to show what a remarkable service has been done analytical chemistry. But it is not here alone that its utility ends. As a means of discovery, it will probably prove to be the most efficient ever employed.

In examining the spectra of alkalies contained in certain mineral waters obtained at Durckheim, in the Palatinate, he observed some lines not like any he had seen before. Convinced they must be due to the presence of some new element, he began immediately the evaporation of 40 tons of the water. In subsequent examinations he discovered fresh signs of perturbation in the spectrum, and at last was able, from a vast quantity of water to obtain a sufficient amount of two new metals for examination, which he named respectively, cesium and rubidium, the former on account of its bluish gray color, and the

latter because of its dark red color. They are distinguished in their spectra, the one by splendid violet, and the other by deep red lines. Singularly enough neither of these metals can be said to be very rare, especially the latter, which may now be obtained by the pound, and is found copiously in lepidolite. Since that time another new metal has been, by similar means, discovered by Mr. CROOKES. It is called thallium, and the spectrum of which is distinguished by one bright green band. It will be impossible to carry out these facts to their obvious consequences, but it may readily be perceived of what surpassing interest this is to be as a means of discovery, and as the most important acquisition ever made perhaps to analytical chemistry.

When we reflect on the probable future revelations, this line of research is likely to give us, of the intimate constitution of matter, and of light itself, and other correlative phenomena, as exhibited in these relations, we can scarcely be too sanguine in our expectations.

Let us now turn our attention, for a few moments, to another application of the facts above detailed, perhaps the most astonishing of all. FRAUNHOFER, so early as 1815, observed that the two lines now known to be sodium lines corresponded in refrangibility with the two lines in the solar spectrum known as Fraunhofer's line D; and the same fact was observed by BREWSTER, in regard to the correspondence between the potassium lines and the solar lines A. In these two cases, as well as in others, by subsequent observers, there was found to be a complete coincidence between the metallic spectra and certain parts of the solar spectrum except in color.

To test this coincidence, KIRCHOFF performed the following remarkable experiments, and in which we will find the facts which lie at the foundation of solar chemistry:—"In order to test this" says he, "I obtained a tolerable bright solar spectrum, and brought a flame colored by sodium vapor in front of the slit, I then saw the dark lines D change into bright ones. The flame of Bunson's lamp threw the bright sodium lines upon the solar spectrum, with unexpected brilliancy. In order to find out

the extent to which the intensity of the solar spectrum could be increased, without impairing the distinctnesss of the sodium lines, I allowed the full sunlight to fall through the sodium flame, and to my astonishment I saw that the dark lines D appeared with an extraordinary degree of clearness. I then exchanged the sunlight, for the Drummond or oxyhydrogen lime light, which like that of all incandescent solid and liquid bodies give spectra containing no dark lines. When this light was permitted to fall through a suitable flame colored by common salt, dark lines were seen in the spectrum, in the position of the sodium lines. The same phenomenon was observed if instead of the heated lime, a platinum wire was used, which being heated in a flame was brought to a temperature near the melting point by passing an electric current through it. The phenomenon is easily explained, on the supposition that the sodium flame absorbs rays of the same degree of refrangibility as those it emits while it is transparent to all other rays." Thus he succeeded in producing artificial sunlight, as far as producing one of Fraunhofer's lines is concerned.

Now, several facts are to be noted from these experiments:—

1st. The sodium lines correspond perfectly, except in color, with a certain part of the solar spectrum.

2d. By permitting sunlight to fall through the sodium flame the distinctive color of the sodium lines disappeared entirely, and the dark lines of the solar spectrum alone appeared.

3d. The same result was secured if the Drummond light was employed instead of solar light; and in this way there was a part of its spectrum produced with the utmost exactness, though it is well known, all incandescent, solid and liquid, bodies give spectra without dark lines.

4th. That when light is transmitted through any substance, in a vaporous or gaseous state, while luminous with heat, it absorbs and arrests, that kind of light it emits with a completeness in proportion to its intensity; so that the lines that appear in the spectrum are dark, and, therefore, not characteristically colored.

5th. These dark lines are found to correspond to the dark

lines in that part of the solar spectrum when the rays of the given color are known to be placed relatively from their observed refrangibility.

It thus appears many parts of the solar spectrum may be artificially produced, and in the completest manner; and that we can determine the conditions upon which these facts depend; and if so, may be prepared to explain some of the spectral phenomena of solar light on the same grounds.

The analysis of spectra of the metals has furnished MILSCHELICH some new facts. He finds metals do not yield a spectrum in all their compounds, and that they do not give the same in different compounds. The character of the spectrum was found to depend upon whether it was produced by the metal or one of its compounds of the first order. The compound may have a spectrum different from the metal from which it is derived. He performed some interesting experiments in the way of determining the temperature at which compounds are decomposed, whereby they may yield the characteristic spectra of their elements; and on the facts thus elicited, bases some interesting speculations as to the temperature of the sun or its atmosphere.

We must not omit to mention a law announced by KIRCHOFF, which is denominated the "law of exchange," which asserts that the relation between the amount of heat or of light emitted from all bodies is invariable for the same temperature. A similar result was also arrived at by other observers.

KIRCHOFF now set himself to map the electric spectra of the metals, and, as his guide, chose the dark lines of the solar spectrum, and was surprised to find a complete coincidence between the bright iron lines and certain dark solar lines. Just as the sodium and potassium lines found corresponding lines at D and A, among the lines of the solar spectrum. The utmost pains were taken to verify this. The coincidence was too remarkable to be the effect of chance. Now, the only difference in the spectra was in the *color* of the lines. In order to explain these phenomena, we must now recur to the results of some experiments recorded above. We may suppose the light of the sun, after its emission, to have passed through the vapor of iron in

the solar atmosphere. Now, we have just seen where a flame is colored with sodium vapor, and the lime light was passed through the flame, how the yellow sodium lines became dark, giving exactly the Fraunhofer line D, in the solar spectrum; and just so if we substitute iron for the sodium in the flame, we will have, instead of the red lines in the iron spectrum, dark ones, which now correspond in all particulars with that part of the solar spectrum with which it was first composed. We have, in fact, reproduced part of the solar spectrum, with the utmost fidelity.

Now, the only chance for mistake, in this case, is in this:—that the iron and other metals affecting the solar light may be in our own atmosphere, rather than in the solar atmosphere. But then we do not have the necessary temperature in our own air to vaporize such elements. Then, if this modification of light was made in our own atmosphere, we should expect the light from the stars and the solar light to correspond. They do not, however, correspond nor do the stars always correspond in their spectra. We have not time to examine all the particulars upon which this marvellous conclusion rests; but the evidence, when thoroughly examined, will be found to establish the fact of the existence of iron and many other elementary substances on the sun, as clearly as any fact in physical science. The induction, through which this conclusion has been reached, is eminently satisfactory.

Now, an examination has been undertaken concerning the light of the fixed stars, and we may expect the most novel and interesting results. This branch of science has been styled "solar" or "stellar chemistry," and has now engaged the attention of the first astronomers and physicists, both in Europe and this country. The astronomer royal of England, Prof. AIRY, SECCHI and DONATE on the continent, and RUTHERFORD in this country, are engaged in the exploration of this brilliant path of research. Thus it will be seen, that we have in this new branch of science, the most valuable acquisition ever made to analytical chemistry, and, at the same time, the most efficient means for enlarging the field of chemical and physical science. There is

no greater triumph of science than the key it has given us by which to translate the mysterious though beautiful language of the spectrum; and if anything more is to be revealed of the intimate constitution of matter, or of those singular movements or force of matter known as light, heat, and electricity, and their correlations, it will, in all probability, be through this remarkable way.

ARTICLE III.

DOUBLE PNEUMONIA, WITH CHRONIC BRONCHITIS, CURED BY SUGAR OF LEAD AND SULPHATE OF QUININE.

By G. C. PAOLI, M.D., of Chicago, Ill.

Read before the Chicago Medical Society.

It is a well established usage, in all diseases, to individualize, and I think more especially in inflammation of the lungs, as the following history will substantiate:—

Mrs. C., 32 years of age, whom I was called to see, on the 8th of January, had been moving to her residence, a few days previous, and had been exposed to the cold atmosphere, and was suddenly, on the 6th of January, taken with a chill; also previous to her sudden illness, she had, for several months, been suffering with dyspnœa, when she exerted herself in going up stairs. When I called to see her, late in the night, I found her very weak, short breathed, with an expression of great anxiety, respiration 60, pulse 120, diarrhœa of several days standing, expectoration frothy mucus, sanguinolant appearance; the tongue nearly natural; pain in the cardiac region on pressure; percussion could only, with very great difficulty, be instituted, as the patient was very weak; the anterior, as well as the posterior, parts dull; crepitation audible, on the whole anterior as well as the posterior part; and at the inferior angle of the scapula, bronchous respiration. In the night, I prescribed vinum antimonii, combined with mucilages, to prevent the increase of the diarrhœa. Next morning, when I called early, I found the

patient in a hopeless condition—I can say nearly dying. The extremities cold and bluish, cold sweat over the whole body, a burning thirst, the tongue dry, the pulse small and weak, about 120, respiration hurried, accompanied by mucous rale in trachea, expectoration frothy and rusty.

Although the treatment in this case seemed to me in vain, I still felt that something ought to be done, and I concluded that sugar of lead in this case would be indicated, namely, to diminish somewhat the profuse cold sweat and diarrhœa. To support the strength of the patient, I added sulphate of quinine, namely, quinine, gr. 1, acetas of lead, gr. ½, one powder every other hour.

Jan. 10.—The patient somewhat better, collapse less, the pulse 90, respiration 42, the cold sweat less, but the mucous rale of trachea was still present, the tongue dry and covered, diarrhœa not present during the night.

Jan. 11.—Respiration 44, pulse 104, the cold sweat had disappeared, the tongue humid, clean, desire for food. The patient had rested during the night; the bowels natural; I did not examine her lungs, because she was feeling so weak.

Jan. 12.—Respiration 38, pulse 100, the cough somewhat troublesome, the expectoration purulent, bronchous respiration from the left spina scapula drawn to the base of the lung, and in the right regio-scapularis; on the right anterior surface sonorous rale; hepatization of the lower left and middle lobe of the lung. In order to avoid tediousness in repeating the different symptoms, I will only say, in conclusion, that the patient regained her strength slowly; and that on the 20th, she began to sit up in her bed. It was in this case that I, for the first time, made a chemical examination of the urine. By applying the test, I discovered the absence of chlorides in the first eight days, and on the ninth, the chlorides appeared.

When I take into consideration my patient's critical condition, I must confess, that in this case, sugar of lead saved the patient's life.

It is often very difficult for medical practitioners to give a certain prognosis in acute inflammations of the lungs, and

equally difficult to follow certain rules, which are laid down for the treatment of this disease, because the patient's age, constitution, and complications embarrass us more or less in treatment of inflammation of the lungs.

Selections.

ON THE THERAPEUTIC VALUE OF ALKALINE AND EARTHY SULPHITES IN THE TREATMENT OF CATALYTIC DISEASES.

By DR. H. R. DE RICCI.

[The discovery, if indeed it may be so called, of the action of sulphites in certain forms of catalytic (zymotic) diseases, was made by Dr. Polli of Milan. Since the publication of Dr. Polli's papers on the subject, Dr. De Ricci has devoted much time and attention to its investigation.]

For the benefit of those who may not have read my former publications on the action of the alkaline and earthy sulphites, nor the original writings of Professor Polli, I shall now, as briefly as possible, recount the origin and result of his discoveries.

For several years past, a theory has been almost universally gaining ground that a great number of diseases depend essentially on the presence of an organic poison circulating in the system, where, acting as a ferment in the blood, it multiplies itself, vitiating the animal fluids and giving rise to divers diseases, according to the special poison in circulation; thus in one case producing small-pox, in another scarlatina, in another puerperal fever, &c. These diseases have been termed *zymotic*, on the supposition that the circulating poison acted as a *ferment* in the blood; but, as the precise mode of action of these animal poisons is not as yet well understood (though it is no doubt a chemicovital action), I shall throughout this paper employ the term *catalytic* instead of *zymotic*, as perhaps better calculated to convey the idea of the function of these poisons, without absolutely involving a principal, which the term zymotic might do.

Several years ago, Professor Polli, being fully convinced of the truth of the catalytic theory of many diseases, devoted his talents to search out some means by which these poisons, even

after they were absorbed and developed in the animal economy, might be neutralized, and eventually eliminated, without, at the same time, imperilling the integrity of the blood. The task was an arduous one, for the great physiologist, C. Bernard, had dogmatically asserted, that any substance capable of destroying a catalytic poison in the blood would, at the same time, so alter that fluid itself that it would be rendered incapable of performing its vital functions. Professor Polli, however, had long observed the action of sulphurous acid in arresting the process of fermentation. He was convinced in his own mind that in it would be found the anti-catalytic substance he was seeking for. He persisted in his researches, and eventually succeeded in establishing that not only sulphurous acid possesses the property of arresting fermentation and neutralizing catalytic action, but that also its alkaline and earthy compounds have the same power, with this difference, that while sulphurous acid cannot in any way be introduced into the circulation with safety, the alkaline and earthy sulphites, hyposulthites and bisulphites can be administered with the greatest impunity, even in large doses; and their presence can always be detected when administered, not only in the blood but in the tissues and evacuations. Having satisfactorily established this important fact, he began a series of experiments on animals, which proved, most successfully, the correctness of his theory and the accuracy of his deductions. Nothing could give me greater pleasure than to recount the several interesting experiments which he performed, but it would lengthen this paper too much, and otherwise occupy too much of the space of the Journal; and, for those who are interested in this matter, I beg to refer them to a communication read by me, about a year ago, at the Obstetrical Society in this city, in which will be found a short epitome of Professor Polli's experiments.

From the moment I first read the account of Professor Polli's researches I came to the conclusion that his discovery was either valueless or of immense value. In such a case there could be no medium; it was either utterly worthless, or it was a discovery second to none—a discovery even greater than that of vaccination, and one which would constitute one of the greatest epochs in the annals of medicine; for vaccine could, at most, only ensure the vaccinated against one single disease, while the sulphites—if they truly could neutralize the action of catalytic poisons—of such poisons as *glanders* (see Polli's experiments)—would be able to arrest the course of small-pox, hydrophobia, syphilis, infection from dissecting wounds, erysipelas, puerperal

fever, measles, scarlatina, whooping-cough, dysentry, diarrhœa, cholera, influenza, typhus, dothinenteria, plague, diphtheria, &c., &c., all of which are classed by Dr. Farre as zymotic diseases. The question seemed to me of such vast magnitude and importance that I solicited in every direction for co-operation in testing the real value of these sulphites. I first tried them on myself, and finding them decidedly harmless, even in doses of one scruple, five or six times a day, I began to administer them in every case where I thought that a catalytic poison might be the cause of disease. In no case did I meet with any mishap, and in most cases I think I can fairly say I was successful. In no case did the exhibition of the sulphites produce sickness of stomach, diarrhœa, or any other inconvenience; and in every case their administration seemed to be of decided advantage.

The first case I shall describe is one of great interest and value in a clinical point of view; it was undoubtedly a case of infection from an animal poison. The patient was almost given over as lost, so severe were the symptoms of the disorder; yet the patient recovered, and the treatment consisted solely in the administration of the bisulphite of soda, in full, repeated, and continued doses.

A lady of about forty-five years of age, of sound constitution, and in the enjoyment of excellent health, was suddenly called, about a year ago, to the death-bed of one who was very dear to her. That death-bed was fearfully sudden and unexpected, and that poor lady could not be persuaded, long after death had indubitably taken place, that the spirit of the beloved one had really fled. She would not leave the corpse; she threw herself on it, and kissed it over and over again, and could not be induced to leave it, even when the discoloration of the skin and the offensive smell of rapidly-advancing decomposition gave ample testimony of the reality of death. The burial was performed two days after death, owing to the rapid decomposition of the body; and, soon after the funeral, I was hastily summoned to the bedside of this lady, whom I found in the following condition. It was about five in the morning when I entered the bedroom. She had gone to bed the night before quite calm and resigned, and on the previous day she had partaken fairly of food, but had not eaten any thing which could in any way account for the state in which I found her, of which the following is a fair sketch:—The windows of the bedroom being open, the morning light streamed freely into the room, and as I approached the foot of the bed I had a full view of the patient's face. To those of my readers who, like myself, have been fa-

miliar with the victims of cholera, I shall simply say that the patient looked like one in cholera, in the stage of collapse. To those who have not yet had the melancholy opportunity of witnessing a case of that terrible disease, I shall say that I hardly recognized my friend, so altered, and pinched, and ghastly were her features. Her eyes were sunk, and surrounded by a lead-colored zone; her cheeks, which, but a day before, were plump and ruddy, were now hollow and sunk; her eyes were glassy; her pulse scarcely to be felt; the surface of the body cold; her breath cold; her tongue cold; her voice low and husky; her faculties perfectly clear. She now lay quite prostrate on her back; but for some hours previously had suffered greatly from vomiting, cramps, and diarrhœa, which was of the characteristic rice-water appearance always observed in cholera. I at once administered a full supply of hot brandy and water, ordered turpentine stupes to the abdomen and limbs, treating the case exactly as one of Asiatic cholera; and, being fully alive to the grave nature of the attack, requested for further advice, and at once sent off for my valued friend, the late Dr. Mayne. At first I felt singularly at a loss how to account for so sudden and severe an attack of what seemed to be a genuine case of Asiatic cholera. So true was it to symptoms that, when Dr. Mayne looked at the patient, he whispered to me: "If cholera were in the country one would not hesitate to give this case a name." The clue to the disease was, however, given to me, in a few words, by the patient herself. As soon as she had taken the brandy she said to me:—"The smell of the body was dreadful; I cannot get rid of it in any way;" and immediately she began to retch. She had given me the key, and the mystery of her case was solved. It was no doubt a case of putrid infection—of septicemia; and if there was any truth in the "sulphite" theory it should prove of value in such a case as this. I at once ordered a strong solution of bisulphite of soda in infusion of quassia, with tincture of bitter orange peel and Battley's sedative—two drachms of the bisulphite to the ounce—and give it in large teaspoonful doses, every half hour at first, and then every hour, each dose containing nearly twenty grains of the bisulphite. I watched this case incessantly myself, day and night, and the result was most satisfactory. All the symptoms by degrees abated, and in a very few days the patient was fully convalescent. Dr. Mayne, who had anxiously watched this case with myself, was so impressed with the results obtained that he told me he would give the remedy a full trial in every case of scarlatina that should come under his care; and, in addition,

promised (at my suggestion) that he would prescribe a dose of the sulphites daily to every healthy member of the family in which there was a case of scarlatina, to test its value as a prophylactic; for if a sulphite could destroy a catalytic principle, even when developed in the system, it should also have the power of preventing the development of that principle from the commencement.

As I stated above, the lady recovered, and, apparently, was restored to absolute health; she, however, complained to me occasionally of wandering pain, and general *mal-aise* at times, which she could not account for. About five months after her recovery she hurt her leg; it was a very trifling abrasion, but it assumed an angry look, and seemed determined not to heal, when at the end of two months she broke out all over with an extraordinary eruption, more like erythema-nodosum than anything else, when I at once placed her again on bisulphate of soda, in the supposition that some of the poison was still lurking in her blood, when the sore in her leg rapidly healed and the eruption disappeared, leaving the patient perfectly well.

The next two cases in my list were well-marked types of measles. I shall not take up the time of my readers by giving the details of them. I shall merely state that they were severe cases; that they were treated solely with bisulphite of soda, in scruple doses, every second or third hour, and that both cases grew rapidly well.

The fourth case is one of poisoned wound. A. B., aged about thirty-five, a gardener, was grafting a cactus, and in carelessly handling such a thorny plant, got the back of his left hand severely stung in different places. He plucked out as many of the spines as he could discover, and thought no more about the matter; but in the course of twelve hours or so the hand began to swell and be painful. He at once wrapped it up in a poultice; but the pain and swelling not abating, his employer sent him to me three days after he had been stung. I found his hand enormously swelled, of a dusky purple color, with large bullæ over the dorsum; the forearm also swelled, though not discolored, but presenting several longitudinal red lines running up to the elbow. The man complained of great pain locally, of intense thirst, headache, loss of appetite, shivering, and general feeling of sickness. His tongue was furred and brown. He had, of his own accord, taken a dose of senna and salts that morning. I at once made an incision in the dorsum of the hand, and some pus came out. It was not, however, like cutting into an abscess—no gushing of matter took place, only an oozing,

like as if I had cut into a sponge saturated with pus. I therefore made a second incision, parallel to the first, from which some more pus came out; ordered him to wrap up the hand in a large linseed-meal poultice, and prescribed the bisulphite of soda, in scruple doses, every second hour. I desired the man to keep quiet at home—without, however, ordering him to keep his bed; directed him to take light nutritious food, and to drink two pints of XX porter in the day. The following day the hand looked better; it was less swollen and purple, and the pus was in larger quantity and better looking. The man felt also better; he had less thirst, and had only had two slight shiverings. The bowels not having been freed, I ordered him some sulphur, with magnesia and scammony, as an aperient, and to persist with the bisulphite, taking it now every third hour. The following day the man was so much improved that he called on me. The hand looked still better; the incisions which I had made had ulcerated somewhat round their edges, but the suppuration was free, and the pus seemed quite healthy; there was no pain in the arm, and the red lines were very much paler. Matters looking so very much better, I desired the man to take the sulphite only three times in the twenty-four hours; to take a good allowance of food; to stay much in the open air; but to still keep the arm in a sling, and the hand wrapped in a poultice. Two days later he again came; when, finding that all swelling had subsided, all pain gone, all red lines disappeared, the sore inclined to granulate, I stopped the poultice, and desired him to dress the hand with some warm dressing, containing a little balsam of Peru, and to take one scruple of the bisulphite twice a day. Two days after the man returned to me not looking as well as at the previous visit. He had a yellowish tinge in his skin; his tongue was foul; he complained of chilliness, almost amounting to shivering, and the sore at the back of the hand looked unhealthy and angry. On stripping the arm, the red lines were again visible, but of a very pale red; while above the elbow, from its bend to the axilla, a hard, knotty, and extremely painful cord could be felt and seen running up parallel to the brachial artery. I at once returned to the primary doses of the bisulphite, wrapped up the hand in a poultice, and watched to see what the result would be. The man immediately began to mend, and in four days not a trace of hardness was to be felt. Fearing, however, a relapse, I continued administering four scruples of bisulphite daily for ten days longer, by which time the hand was perfectly healed, and the man returned to his work.

Two better cases for testing the effects of sulphites could not possibly have been selected; in both cases the disease clearly resulted from the working of a poisonous element in the blood, evidently introduced from without in the first case, whilst it may in the second case have originated within the system subsequent to the stinging with the thorns, if one does not feel justified in considering cactus thorns as poisonous of themselves; be this, however, as it may, the second case was as clearly one of purulent absorption as the first was of putrid infection—the red lines up the arm marking the course of the inflamed lymphatics as the hard knotty condition of the veins denoting the phlebitic inflammation. Both were treated solely with sulphites, and both completely recovered. It would be great presumption, no doubt, to say that in both cases the patients would have lost their lives except for the saving properties of the bisulphite of soda administered; but I still cannot avoid believing that the sulphurous acid did prevent the spreading of the catalytic principle by rendering it incapable of reproducing itself; and, while keeping it in abeyance, allowed time for its elimination by the ordinary powers of nature; and I think we have a confirmation of this view in the occurrence of a relapse in both cases, where it would appear as if, when the bisulphite was stopped, all the poison had not yet been eliminated, the blood disease breaking out again the moment that the poison was freed of its antagonist; and a cure being effected by administering more of the anti-catalytic remedy until every trace of the animal poison was eliminated.—*Dublin Quarterly Journal, August*, 1864, *p.* 28.

LETTER FROM DR. W. N. COTE.

SEPTEMBER 9TH, 1864.

ANIMALCULAR ORIGIN OF DISEASE.—In a paper recently addressed to the Academy of Sciences, Drs. Leplard and Jaillard examine whether microzoaria are the real causes of the diseases in which their presence has been ascertained in the human body. You are aware that in their endeavors to explain the origin and propagation of contagious disorders, physicians have often attributed these affections to the existence of invisible animalcules, parasites, or impalpable ferments. This hypothesis was extremely plausible, and received a superstructure of various medical theories, but these had still to be verified, for while it was necessary to prove that there exist cryptogamous

plants and infusoria capable of engendering diseases. Various attempts have been made to solve this important problem, and observers of unquestionable merit, considering all kinds of virus to be ferments, and ferments to be animated beings, have not hesitated to attribute to infusoria the development of carbuncle, typhus fever, and other affections, because they had found such microscopic animalcules in the blood of subjects that had died of these maladies. Our authors are of opinion that such assertions are, at least, premature, and ought to have been supported by more direct evidence than that as yet adduced. Thus, instead of inoculating animals, as some have done, with the blood of subjects laboring under carbuncles, a blood in which the microscope can detect but very few of the elements it contains, they think it more advisable to operate with bacteria free from all accessories, which might either rightly or wrongly be suspected of being the active principles of the disease. Bacteria, as your readers are aware, are infusoria of the genus vibrio; under the microscope they have the appearance of threads, and they are developed in all liquids containing animal matter in a state of decomposition. It is, therefore, very easy to procure these animalcules, and our authors have performed a series of experiments, by injecting liquids containing them into the cellular tissues, and even the veins of rabbits, dogs, and other animals. These experiments show that the introduction of bacteria or vibrios into the blood causes no virulent disorders; although the putrified substances introduced may produce the effects of poison.

International Medical Congress.—I have now before me the draft of the convention proposed by a committee of the International Medical Congress at Geneva, for general adoption, and agreed to, and to which I referred in my preceding letter. I think it well to place it before your readers.

"The undersigned plenipotentiaries assembled in congress at Geneva, have adopted the following arrangements to be observed in case of hostilities breaking out between their respective countries:—

1. Ambulances and military hospitals shall be recognized as neutral, and as such, protected and respected by the belligerents as long as they shall contain sick or wounded.

2. All the sanitary staff, including physicians and surgeons, apothecaries, attendants, officials, and generally all persons attached to the service of hospitals and ambulances, shall be considered neutralized.

3. The above-mentioned persons shall be permitted, even after

occupation by the enemy, to continue to fulfil their duties in the hospital or ambulance to which they are attached, as long as shall be necessary, after which they shall be allowed to depart without being in any way hindered or inconvenienced.

4. These persons, however, shall not be permitted to remove any articles but those which are their own private property. All materials employed in the arrangement of the ambulance or hospital will remain subject to the rights of war.

5. The inhabitants of the country, who may be employed in the transport of the wounded, or in bringing them assistance upon the field of battle, shall be equally respected, and remain entirely free.

6. Soldiers badly wounded, whether already received into the ambulances and hospitals, or whether picked up upon the field, shall not only have there hurts attended to irrespective of their nationality, but shall also not be made prisoners. They may return to their homes, upon condition of not again taking up arms during the course of the campaign.

7. A safe conduct and, if necessary, the costs of the route, shall be handed to soldiers mentioned in the preceding article, when after cure, they leave the place where they have been nursed.

8. Articles requisite for the sick and the persons attached to the ambulance, shall be supplied to the army in occupation, which shall be subsequently repaid the outlay shown to have been incurred, by receipts furnished for the purpose.

9. A distinctive and uniform armlet shall be adopted by the sanitary officials and staff of all armies. An identical flag shall also be employed in all countries, to distinguish ambulances and military hospitals. The armlet and flag shall be those agreed upon by the International Conference which met at Geneva in 1863, (a red cross upon a white ground.)

10. Those persons, who, without being entitled to wear the armlet, shall adopt it to enable them to act as spies, shall be punished with the full rigor of military law.

11. Similar stipulations to the preceding, relative to naval warfare, shall form the object of a further convention between interested powers.

Oxygen and Ozone.—M. St. Edme publishes certain experiments, from which it appears that oxygen separated by the electrolytic process from a binary compound is not ozonized, and that this state only manifests itself when the decomposing power of electricity has been brought to bear on a double chemical affinity. M. St. Edme is consequently inclined to suppose

that ozone is but a different dynamic state of oxygen, and not a chemical or physical transformation.—*Med. & Surg. Reporter.*

TREATMENT OF ACUTE ORCHITIS BY PUNCTURING THE TESTICLE.

Henry Smith, Esq., Assistant-Surgeon King's College Hospital, in a case of very acute gonorrhœal orchitis, supposing supperation had taken place, with a view of evacuating the pus, made a free incision; but, to his dismay, no matter escaped. Speedy relief, however, followeed, and this case suggested some serious reflections. The quantity of serum and blood abstracted was too small, for the cessation of pain and swelling could hardly be due to this cause, and he was led to ascribe the relief to the removal of tension by the division of the fibrous envelope of the testis.

"Influenced," he says "by this reasoning, and by the result of this case, I determined to try the effect of puncturing the testis in similar cases; and in the next case of acute orchitis which presented, I made a deep and free incision with a sharp narrow bistoury, emitting about half a teaspoonful of serum and several drachms of blood; and no other treatment, beyond a little of the common aperient mixture, was supplied. The result here was as successful as in the former; and as cases presented themselves, I adopted the same plan of treatment, reserving it, however, especially to those instances where the swelling and pain were very great. After the trial in a few cases, it was found that the success attending this practice was such as to lead me to adopt it as the usual treatment of acute orchitis; and during the last twelve months I have probably treated in this way upwards of twenty cases, with results as have astonished both myself and those numerous pupils who have witnessed the practice.

"In nearly every case so treated—and I have purposely selected the most acute—the patient has experienced the most striking relief before he has left the out-patient's room; and on the next visit, forty-eight hours afterwards, the contrast presented is so remarkable that the superiority of this plan over the old-fashioned modes of treatment is at once impressed forcibly upon the minds of those even who would naturally be prejudiced against so apparently heroic a treatment. The speedy subsidence of all the acute symptons is due entirely to the puncture of the swollen and inflamed organ, for I have taken especial care

not to prescribe anything else except a little of the common white mixture, or perhaps the use of the ordinary lead lotion, and this chiefly to please the patient.

"The only inconvenient result," he states, "I have witnessed from this treatment, was the following: An incision was made into the testicles of a middle aged man, with the usual relief, but in a few days the scrotum began to swell, great pain was experienced, and the man was taken into the hospital. The objectors to the mode of treatment suggested all sorts of disasters, in the shape of suppuration of the testicle, &c., but on careful examination it was ascertained that the swelling consisted of a large and rapid effusion of fluid into the tunica vaginalis, which was at once evacuated, with speedy relief to the patient. In another instance I made the incision much deeper than was necessary, carrying the point of the knife nearly to the back of the organ.

As much as ten ounces of blood was lost, but the testis was violently inflamed and swollen, and the only effect of the accident was to make the patient somewhat faint, but at the same time to give more speedy and effectual relief than usual.

"This circumstance may lead one to the belief that the relief is due solely to the escape of blood from the puncture; but this view is inconsistent with the fact that great relief is given when only a few drachms of blood, mixed with serum, are discharged. Doubtless the direct withdrawal of blood from the highly inflamed testicle is of service, but my own view of the matter is, that the relief is in a great measure due to the withdrawal of the tension from the body of the testis by free division of the tunica albuginea."

In a postscript, Mr. S. adds:—"Since the above was written I have seen one of my old pupils who has been spending the last six months in the Paris hospitals, and he informs me that the ordinary practice at the Hopital de Midi, in cases of acute orchitis, is to make a puncture in several places with a lancet; the instrument is not carried into the body of the testicle, but simply through the tunica albuginea. He describes the plan of treatment as most successful."—*Amer. Jour. Med. Science, from the Lancet, Aug.* 6, 1864.

EFFECTS OF THE EXCESSIVE USE OF SUGAR ON THE SYSTEM.

Dr. Champouillon communicated the result of his observations on the excessive use of sugar on the system. So far back as

the year 1846, the author undertook a series of experiments on himself, in order to supply the Minister of War with information as to the possibility of replacing salt by sugar in the preparation of the preserved meat destined for the use of the army during a campaign. In accordance with his instructions, M. Champouillon strictly confined himself to the diet which may be accidentally enforced on the garrison of a besieged city by the hardships of war, and for several days in sucession lived on the following rations: sixteen ounces of beef preserved in sugar, and four ounces of biscuit; water was his only beverage. Various phenomena supervened in the following order: thirst, sinking at the stomach, distaste for food, nausea, acid regurgitation, epigastric pain, diarrhœa, prostration, and syncope.

"I carefully watched these symptoms," says M. Champouillon, "and the loss of appetite and nausea indubitably proceeded from the absence of variety in my diet; whereas the thirst, heartburn, epigastric pain and diarrhœa were as clearly referable to the difficulty of digesting cane-sugar. In proportion to the impression produced by this substance on the organs of taste, it clogs the palate and destroys natural appetite. This excessive indulgence in syrups, sweet-meats, pastries, and highly-sweetened diet-drinks, brings on distaste for food, and annihilates the digestive powers, especially in cases of pulmonary consumption." After expatiating on the transformation of sugar-cane into glucose, in consequence of its contact with the acids contained in the gastric juice, and on the injury caused by the increased activity imparted to the functions of the stomach by frequent repetition of the process, M. Champuillon showed that in addition to the inflammatory congestion thus occasioned, glucose powerfully contributes to the establishment of a plethoric condition of the system, and that the prevalent opinion, that the excessive use of sugar tends to cause pulmonary irritation and a disposition to atrophy, is but too well justified by facts. In support of this view, the author adduced two interesting cases, one of apoplexy, the other of hæmoptysis, in which the agency of this cause was distinctly evident.

"I have often remarked," said he, "in thirty-three years' experience of tubercular disease, that the cough, hectic fever, and night-sweats are increased by the fondness of the patients for sweet substances. I conceive this to be the natural consequence of the combustion of the glucose in the system, a phenomenon which necessarily implies the production of water, carbonic acid and heat. It is a well-known fact that three and a half ounces of sugar consumed in the human body evolve an

amount of heat equivalent to what might be produced by the combustion of thirty-two grains of charcoal. MM. Favrot and Silberman have shown that fifteen grains of charcoal are sufficient to impart one degree (cent.) of heat to eight kilogrammes or sixteen pounds of water. If the capacity of the human body for caloric is the same as that of water, three ounces and a-half of sugar will, in a subject weighing seventy-five kilogrammes (12½ st.), raise during their combustion the temperature of the body four degrees and a-half (centigr)."

The practical conclusion of this paper is, that it is desirable to reduce within as narrow limits as possible the consumption of sugar, especially in cases of tuberculosis, and to replace that substance by honey, or a decoction of liquorice.—*Dublin Med. Press, Feb.* 24, 1864, *from Journ. de Med. et Chirurg.*

ON THE CONDITION OF THE STOMACH AND INTESTINES IN SCARLATINA.

By Dr. SAMUEL FENWICK, late Lecturer on Pathological Anatomy at the Newcastle-on-Tyne College of Medicine, in connection with the University of Durham.

The object of this paper is to prove the following propositions:

1st. That the mucous membrane of the œsophagus, stomach, and intestines is inflamed in scarlatina.

2d. That desquamation of the epithelium of these parts takes place.

3d. That notwithstanding the anatomical changes in the mucous membrane of the stomach, the formation of pepsine is not prevented.

4th. That the condition of the skin is similar to the condition of the mucous membrane in scarlatina.

In support of the first proposition, the microscopic examinations of the mucous membranes of the œsophagus, stomach, and intestines were detailed in ten cases of death from scarlatina during the first week of illness, and in six cases who died in the second and third week of the fever. The first effects of the scarlatina poison upon the mucous membrane of the stomach were shown to be the congestion of the bloodvessels, and the stripping of the epithelium from the tubes and the surface of the organ, and also the softening of the tissues. The tubes are greatly distended by granular and fatty matters, or by small cells intermixed with granules, and in some cases they are lined

by a newly-formed membrane. Sometimes no normal cells can be distinguished; in other cases they are present, but are scattered irregularly. After the second or third week the tubes are found less distended than at an earlier period, and whilst their closed ends are still loaded with granular matters, which greatly obscure the gastric cells, these become more evident towards the surface of the mucous membrane. The cells at this period are sometimes very large, sometimes loaded with fat or coated with granules, and seem to have but little adhesion to their basement membrane, as they readily separate from the tubes, but adhere closely to each other. The effects of the inflammation upon the intestines seem, in slighter cases, to consist in the effusion of granular and fatty matters into the mucous membrane; but in more severe cases the tubes of Lieberkühn are obstructed by epithelial cells, whilst extravasations of blood take place in the villi, and these with the rest of the mucous membrane, are loaded with small cells and granules. In one case the mucous membranes was entirely stripped of villi, excepting a few fragments which still remained, and the enlarged and prominent opening of the follicles of Lieberkühn gave its surface the appearance of a sieve. In some instances in which the pancreas has been examined, evidences of disease presented themselves.

The second proposition was stated to be more difficult of proof, inasmuch as vomiting usually occurs only in the first stage, and the author had no opportunity of examining the vomitted matters at this period of the disease. In one case, in which vomiting took place in the third week, fibrinous casts of the stomach tubes were discovered, and inflammation of the mucous membrane was proved to have existed by *post mortem* examination. The chief reason upon which the opinion that desquamation of the epithelium occurs was founded, was from the microscopic examination of the contents of the stomachs of those who had died of this disease. The contents in recent cases consisted of pieces of fine membrane, of cells, and of granules and shreds of membrane. The membranes were of the shape and size of the tubes of the stomach, and were covered with granules and fat. The cells varied from 1-1200th to 1-2200th of an inch, and were usually fringed with fine pieces of membrane. In cases of longer duration the membranes were covered with cells, and were also of the size and shape of the stomach tubes. In order to ascertain if these appearances were trustworthy as evidences of inflammation, the contents of the stomachs of forty-five subjects were examined at the Middlesex

Hospital, the condition of the mucous membrane being at the same time noted. In only one were there any fibrinous casts, and it was in a case of acute gastritis. In eighteen there were only separate cells, chiefly of the columnar form, and in none of these was there any inflammatory action. In eight cases casts of the upper parts of the tubes were plentiful, composed only of healthy conical cells, and in all the mucous membrane was in a natural condition. In eighteen there were either plugs formed of cells and granules from the secreting parts of the tubes, or the casts of conical cells were overlaid with granular matters, and in all of these the stomach was more or less inflamed. Two cases of gastritis, unconnected with scarlatina, were also quoted as examples of the forms in which casts of the stomach tubes appeared in vomited matters during life, and the author stated he had detected casts of the stomach tubes in matters vomited by persons affected with gastritis connected with diseased kidneys, with inflammatory dyspepsia, and other forms of inflammation of the gastric mucous membrane. It was urged that if casts of the gastric tubes can be discovered during life in cases of gastritis, and if in scarlatina this condition exists, and casts have been found in the stomach after death, there is every probability that desquamation of the epithelium takes place in this organ, as it does in the skin and the kidneys.

In support of the third proposition, the results of the following experiments were given in the three cases of scarlatina:— Ten grains of hard boiled white of egg were digested at a temperature of 90° for twelve hours in an infusion of the mucous membrane, to which three per cent. of hydrochloric acid had been previously added. The average loss of albumen was three grains and two-thirds. Similar experiments performed with the stomachs of eleven males who died of various diseases at the same hospital gave an average loss of four grains; so that there had been scarcely any diminution of pepsine produced by the fever. As a contrast to this were the results of similar experiments upon four cases who died of typhus fever. In two of these the albumen had gained three grains of weight by imbibition, and was not at all softened; whilst in the other two it was softened, and one had lost only half a grain, the other one grain and a-half in weight. But as the activity of the digestion must depend not only upon the relative amount of pespine, but also upon the bulk of the mucous membrane, this was also attempted to be estimated. The average weight of the mucous membrane of the stomachs of ten males dying of various diseases at the Middlesex Hospital was eighteen drachms, the weight of two

recent cases of scarlatina was eighteen and sixteen drachms (the latter being in a boy), whilst it only amounted to fifteen drachms in one who died in the third week of illness. In four cases of typhoid fever the average weight of the mucous membrane only reached eleven drachms.

Under the fourth proposition, it was stated that the skin had only been examined microscopically in three cases. In the first, in which the patient died after a few days' illness, the only morbid appearance in the cutis was an occasional minute extravasation of blood in the neighborhood of the sudoriferous ducts. The rete mucosum was greatly thickened, and numerous round cells with large nuclei were everywhere visible, intermixed with the natural cells. The basement membranes of the sweat-glands were thickened, and the epithelium lining them was so much increased that in most cases it obstructed their channels. In some of the sweat-glands the coils of which they were composed were loaded with coagulated blood, and were greatly and irregularly distended. In the other recent case the appearances were similar, excepting that the external layers of the cuticle were stained with blood in minute patches, and the sweat-ducts were also reddened; but there were no extravasations of blood either in the glands or cutis. In some of the ducts the epithelium was detached from the basement membranes. In the case of a man who died during the third week, the sudoriferous tubes were still choked up, but in the glands the epithelium seemed in many places to be torn away, leaving the basement membranes bare, or only covered by ragged particles. The cutis was in a natural condition.

The author stated that although he had, in accordance with the usual custom, described the appearance of the skin and mucous membranes as the results of inflammation, yet that certain considerations suggested the idea that the term when so used was perhaps misapplied. In scarlatina, we find that in each part the morbid condition is mostly confined, in the first instance, to the basement membranes, and consists in the formation of layers of new cells, which, in the skin, are transformed into cuticle of natural appearance, and in the stomach contain pepsine. If future researches should prove that a similar condition occurs in the kidneys and other parts, it will be necessary to look upon the structural changes produced as resulting from increased physiological, rather than pathological action; and that the primary effect of the scarlatina poison is suddenly and violently to stimulate the natural cell-growth of the various secreting organs.—*Lancet, July* 23, 1864, *p.* 93.

ON THE TREATMENT OF FEVER.

By DR. GULL, Physician to Guy's Hospital..

[The following short extract from some editorial remarks made by Dr. Gull, is contained in the "Reports of Hospital Practice" in the Medical Times and Gazette. When the pulse in the early stage of typhus or typhoid is very frequent, the patient requires to be well supported, in order to carry him through the later stages of the fever.]

Dr. Gull proceeded to remark: I do not believe in giving enormous doses of brandy in fever.' My experience is against that system. I am sure of this, that if you have a severe case of typhus, and the patient is likely to die, no amount of brandy will save him.

Another part of the treatment that requires your attention is this: when I am called in to see a case of fever, I am not unfrequently told that the patient has been given something every half hour. In one case they said every five minutes. The plan of continually feeding Dr. Gull very strongly condemned; further saying, it is a very doubtful question in my mind whether much, or if any, of the nourishment given in severe cases is assimilated. But there is another way to support the patient; keep him cool, sponge his skin over three or four times a-day, give him plenty of liquids, to support the renal respiration, and plenty of fresh air to support the pulmonary respiration.—*Med. Times and Gazette, Aug.* 20, 1864, *p.* 196.

Book Notices.

A Treatise on Military Surgery and Hygiene. By Frank Hastings Hamilton, M.D., late Lieutenant-Colonel, Medical Inspector U.S.A.; Professor of Military Surgery and Hygiene, and of Fractures and Dislocations in Bellevue Medical College; Surgeon to Believue Hospital; Professor of Military Surgery, &c., in Long Island College Hospital; author of "Treatise on Fractures and Dislocations," and of a "Practical Treatise on Military Surgery." Illustrated with 127 Engravings. New York: Bailliere Brothers, 520 Broadway.

This is a full-sized octavo volume of 648 pages, printed on fair type, good paper, and neatly bound.

The Author is one of the most careful observers and best

writers in the profession. Combining ample experience in the field, the camp, and the hospital, with long study and discipline as a teacher in surgery, we should expect from his pen a work of the highest order of merit.

The general scope of the work will be best indicated by the following table of contents:—

Chapter 1. Introduction. *Chap.* 2. Examination of Recruits. *Chap.* 3. General Hygiene of Troops. *Chap.* 4. Bivouac, Accommodation of Troops in Tents, Barracks, Billets, Huts, &c. *Chap.* 5. Hospitals. *Chap.* 6. Preparations for the Field. *Chap.* 7. Hygienic Management of Troops upon the March. *Chap.* 8. Conveyance of Sick and Wounded Soldiers. *Chap.* 9. Gun-Shot Wounds. *Chap.* 10. Gun-Shot Injuries of the Head. *Chap.* 11. Gun-Shot Injuries of the Face and Neck. *Chap.* 12. Gun-Shot Injuries of the Thorax. *Chap.* 13. Fractured and Incised Wounds of the Thorax. *Chap.* 14. Gun-Shot Wounds of the Abdomen. *Chap.* 15. Punctured and Incised Wounds of the Abdomen. *Chap.* 16. Gun-Shot Wounds of the Male Organs of Generation. *Chap.* 17. Gun-Shot Fractures. *Chap.* 18. Amputations. *Chap.* 19. Exsections. *Chap.* 20. Arrow Wounds. *Chap.* 21. Traumatic Gangrene. *Chap.* 22. Hospital Gangrene. *Chap.* 23. Dry Gangrene. *Chap.* 24. Tetanus. *Chap.* 25. Scorbutus. *Chap.* 26. On the Employment of Anæsthetics in Major Amputations, and in other Severe Surgical Operations, after Gun-Shot Injuries. Appendix.

Such are the subjects treated in the work before us. From the brief examination we have been able to make, we do not hesitate to recommend it as the best work on Military Surgery and Hygihne, now accessible to the profession, in this country.

We would especially commend the Hygienic part of the work.

Braithwaite's Retrospect of Practical Medicine and Surgery. Part I. January, 1865. Uniform American Edition. New York: W. A. Townsend, 55 Walker Street.

This well-known semi-annual publication is still promptly issued; and the contents of the present number are as varied and valuable as those of any that have preceded it.

London Lancet:—This standard representative of English medical literature appears promptly every month, from the Republication Office, 109 Nassau Street, New York.

Editorial.

Mortality of Chicago for Jan. 1865.—The following table shows the mortality of Chicago for the month of January, 1865, as condensed from the Health Officer's report:—

Accidents and Injuries,	6	Epilepsy,	1
Apoplexy or Congestion of Brain	2	Disease of Heart,	1
Inflammation of Brain,	7	Marasmus,	4
Inflammation of Lungs,	9	Burned,	3
Inflammation of Stomach & Bowels	5	Typhoid Fever,	12
Pulmonary Consumption,	35	Typhus Fever,	1
Disease of the Liver,	1	Paralysis,	1
Laryngitis or Croup,	23	Scarlet Fever,	8
Convulsions,	18	Small-Pox,	10
Childbed Fever,	10	Spinal Meningitis,	1
Diphtheria,	5	Sciatica,	1
Dropsy,	10	Old Age,	4
Hydrocephalus,	6	Stillborn,	10
Dysentery,	1	Unknown,	21
Diarrhœa,	7		
Erysipelas,	2	Total,	225

Ages of the Deceased.—Under 5 years, 100; over 5 and under 10 years, 14; over 10 and under 20, 3; over 20 and under 30, 30; over 30 and under 40, 25; over 40 and under 50, 15; over 50 and under 60, 9; over 60 and under 70, 6; over 70 and under 80, 7; over 80 and under 90, 1; stillborn, 10; unknown, 5. Total, 225.

The above table indicates a very healthy condition of the City; the gross mortality being at least 25 per cent less than for the month of January, 1864. This is probably owing to the coëxistence of two circumstances:—

The first is, that the past month (Jan., 1865) has been only moderately cold and dry, with no sudden and extreme atmospheric changes. The second is, that the river and atmosphere of the City have been much less offensive from putrid animal matter than during the corresponding month last year.

Chicago Medical College Commencement.—The Annual

On Patent Rights and Medical Men—Dr. David Prince, Ill., Chairman.

On Revision of Plan of Organization—Dr. N. S. Davis, Chairman.

On Specialists—Dr. J. Homberger, N. Y., Chairman.

On Compulsory Vaccination—Dr. A. N. Bell, N. Y., Chairman.

On Rank of Medical Corps in the Army—Dr. C. S. Tripler, U. S. A., Chairman.

On Rank of Medical Corps in the Navy—Dr. T. L. Smith, N. Y., Chairman.

WM. B. ATKINSON, *Permanent Secretary.*

We insert the foregoing notice of the approaching meeting of the Association with much pleasure.

We anticipate such arrangements for the management of the several *Sections*, at the next meeting, as will secure the more thorough and interesting examination and discussion of all papers presented, and the restriction of entertainments, sight-seeing, &c., more nearly within their proper limits. It would be a good plan, therefore, if all who make reports or wish to present volunteer papers, would be ready on the first day, at the morning Session; that appropriate references may be made at once.

It is also extremely desirable that all reports and papers should be *fully prepared*, before presentation, that they may be passed directly from the Sections to the Committee of Publication, (if deemed worthy,) without being left, *perhaps months*, in the hands of their authors, for completion or revision. This would save the Committee of Publication much vexatious delay in the performance of their duties, and ensure a much earlier completion of the annual volume of Transactions. All we hear from the profession in the Middle and Western States, indicates a lively interest in the Meeting to be held in June next.

Arsenic-Eating in Styria—Dr. Craig Maclagan, in a paper lately read before the Edinburgh Medico-Chirurgical Society, shows that the "arsenic-eating" of Styria is no fable. On a late

visit to Styria, he took occasion to investigate the matter himself; and, with his own eyes, saw one man swallow over four grains of arsenious acid at a dose, without suffering any poisonous symptoms. He afterwards found arsenic in the man's urine. Another man swallowed, in the doctor's presence, six grains of arsenious acid, eating it on bread and butter. "The man stated that he generally takes about the quantity we saw him swallow once a week, but with variations in the intervals, there being sometimes four days only, sometimes eight days, between the dose; that when he has a distance to walk to his work, he takes a larger dose, and is then in good spirits for about eight days; that if he, however, intermit it for fourteen days, he feels stiff in the feet, with general lassitude, and a craving for another dose. If his victuals are hard of digestion, he takes a dose to assist the stomach; and if he takes a rather full dose, he brings a good deal of wind off his stomach, but never vomits. He stated that his father had taken arsenic before him, and in considerable quantity; and that, in the immediate neighborhood of Liegist, numbers use it, several taking it daily, and many in larger doses than he. He said that all who take it are healthy; that he never knew of any one vomiting from its use; and he believed that, like the use of tobacco, if the dose is very gradually diminished, an arsenic-eater can break himself of the habit. —*British Med. Journal.*

Treatment of Onychia.—The disease of which Mr. de Moerloose, of Ghent, effects a cure in a few days by the application of nitrate of lead is not that which is popularly termed the growth of the nail into the flesh, but the fungous, ichorous, unhealthy ulcer, occurring especially in children at the root of the nails, which fall away, leaving a sore with swelled, jagged edges, causing a deformation of the finger or toe, and occasionally requiring amputation.

"Parents," says Mr. de Moerloose, "frequently convey their children to the hospital requesting me to cut off the diseased finger. This I have never consented to do, and I may add that I have always succeeded in effecting a rapid cure. A week or ten days in general, or at the farthest three or four weeks, have always been sufficient for the purpose, even under the most unfavorable circumstances. The remedy I resort to is the application, after the excision of any irregular horny excressences, of powdered nitrate of lead. The wound should be dressed once a day only; the pain promptly subsides, the swelling soon decreases, the secretion resumes a healthy character, and, in the course of five or six days, the sore is often thoroughly cleansed."

Mr. Wardrop, who refers the disease to syphilis, recommends mercury to be employed so as to affect the gums in about a fortnight (*a*); but although the affection may occasionally in the adult be traced to this cause, it is frequently met with in hospitals for infancy, where it appears more obviously connected with a scrofulous condition of the system, and much more rapidly yields to the very simple treatment above described than to any other medication.—*Med. and Surg. Rep.*

Respiration after Decapitation.—It appears that respiration to some extent can take place even after decapitation. A clever physiologist, M. Faivre, having some years ago made certain delicate experiments on the breathing of insects, came to the conclusion that in insects as well as in mammalia, the breathing faculty has its seat in some particular region of the nervous system, this region being the metathoracic or central ganglion. Another physiologist, M. Bandelot, a few days ago sent in a paper to the Academy of Science, in which he endeavored to show that M. Faivre was entirely wrong, and that the metathoracic ganglion was quite innocent of any action whatever in the breathing process. As to M. Bandelot's arguments it is feared that they can only be defended on the principle that the end jnstifies the means—for in order to ascertain this point in physiology, he tells us he took a caterpillar, the larva of a *libellula*, and summarily cut off its head; after which operation, the larva was good natured enough to continue breathing for twenty-four hours longer. Thus M. Bandelot had the satisfaction of ascertaining that the cerebral lobes have nothing to do with breathing, although some people are likely to object that the larva must have found it more inconvenient to breathe *with* a head than *without* one. But our author not being yet satisfied, took another larva, cut it right across through the middle, and discovered to his intense satisfaction, that the subject could breathe even without a metathoracic ganglion! Whether the larva was equally delighted is to be doubted, for M. Bandelot does admit there was some slight irregularity in the breathing.—*Med. and Surg. Rep.*

Treatment of Asthma.—It is almost impossible to lay down general rules applicable to the treatment of every case of asthma, because remedies efficacious in one instance prove injurious in another. We alluded in our last number to nitrated leaves and preparations of lobelia. The following is a prescription which Prof. Trousseau has often found serviceable when other remedies have failed:—

℞. Potassii iodidi, ℥ij.; Aquæ destil, ℥v.

The dose is one teaspoonful every day before dinner when dyspnœa persists after the cessation of the more violent paroxysms. This medicine facilitates expectoration and restores the freedom of respiration.—*Jour. Prac. Med. and Surg.*

Regeneration of Bone.—In a biographical sketch of Prof. J. R. Wood, N. Y., (in the *Med. & Surg. Rep.*) Dr. Francis states that Dr. Wood has reproduced almost every bone in the body by treating with profound respect the periosteum. His museum contains all the experiments on the human patient that were practiced on birds and quadrupeds by Duhamel and Flourens.

Obituary.—Wm. Senhouse Kirkes, M.D., died Dec. 8, 1864, of double pneumonia, with pericarditis, after an illness of five days. Dr. Kirkes was physician to St. Bartholomew's Hospital, and well known in this country as an author of an excellent hand-book on Physiology. His age was 41.

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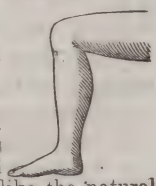

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New York, February 10, 1860.

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Third. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

Fourth. The springs are made of India-rubber, and imitate more closely the action of the muscles.

Fifth. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

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ARTICLE IV.

CLIMATE AND DISEASES OF NEW MEXICO. REMARKABLE EXEMPTION FROM CONSUMPTION. PREVALENCE OF RHEUMATISM AND SYPHILIS.

The statement has been made by a French writer, that tubercular consumption does not originate in regions elevated 5000 feet or more above the sea. Knowing that the Territory of New Mexico had an elevation varying from 4000 to 10,000 feet, and that it had shown a remarkable freedom from tubercular disease, according to the statistics of the U. S. Army, I felt strongly desirous of ascertaining whether it might not be the best place to which we could send consumptively inclined patients from this region. I, therefore, addressed a letter of inquiry to Dr. O. M. BRYAN, Surg. U.S. Vols., and Med. Director at Santa Fé, N. Mexico. I present his reply to the readers of the EXAMINER, in the following pages. Surgeon BRYAN is known to the profession of this State as the former Secretary of the Illnois State Board of Medical Examiners.

E. ANDREWS, M.D.

SANTA FE, N. M., Nov. 10, 1864.

DOCTOR ANDREWS—*Dear Sir:*—In reply to your letter, making inquiries in regard to the character of diseases peculiar to this country, the effect of high latitudes upon diathesis, etc.,

I would say: that your questions can be more correctly and satisfactorily answered by furnishing you, from the Hospital records, the necessary statistics.

I, therefore, enclose herewith a consolidated meteorological register for the year 1863, taken from the records of the hospital at Fort Marcy, Santa Fé, N. M. Also, a consolidated report of sick and wounded for the same year.

From the former, you will be able to obtain much important information in regard to the peculiarities of the climate of Santa Fé; and from the latter, you can form some idea of the varieties of disease we have to treat in this department; you cannot, however, from this report obtain any information in regard to the diseases peculiar to Santa Fé, from the fact, patients are brought here for treatment, from all parts of the Department, from an altitude of near 3500 to that of near 7000 feet. You will observe from this report, that there were 32 cases of intermittent fever treated during the year; in my opinion, not one of them originated in Santa Fé. The 269 cases treated during the year, in hospital at Fort Marcy, are classified as follows:—

Fevers, continued, 1; typhoid, 1; intermittent quot. 32,	34
Diseases of the organs connected with the digestive system,	25
Diseases of the respiratory system,	40
Diseases of the brain and nervous system,	5
Diseases of the genital organs and venereal affections,	74
Diseases of the fibrous and muscular structure,	12
Abscesses and Ulcers,	6
Wounds and Injuries,	49
Diseases of the eye,	4
Diseases of the ear,	3
All other diseases,	17

Out of the entire number, there were only six deaths: one from delirium tremens; one from syphilis consec'd; one from anasarca; one from debility; and two from pneumonia. I would here remark, that the 269 cases referred to, were composed of troops from California as well as from New Mexico.

For the past eighteen months, I have been on duty in Santa Fé; and during that time have had a good opportunity of ob-

serving the character of diseases common to the natives of the city and county about. Agreeable to your request, I will give you the names of the diseases most frequently met with among the native population of this section of New Mexico, and to the best of my judgment the ratio per 100 of each:—

Gonorrhœa,	15	Pneumonia,	3
Syphilis,	8	Paralysis,	4
Rheumatism,	10	Chorea,	1
Dyspepsia,	10	Scrofula,	6
Diarrhœa,	6	Erysipelas,	3
Dysentery,	3	Anasarca,	4
Hepatitis,	3	Ascites,	2
Catarrh,	12	Typhoid Fever,	2
Bronchites, chronic,	3	Conjunctivitis,	5

You will be surprised at the large percentage of venereal disease; but if you could live in this country, and become acquainted with the manners and customs of the people, you would find the Mexican population in a state of complete moral degradation, unsurpassed, in my opinion, on the face of the earth. The natives (with a few exceptions) consider it no more of a disgrace to be suffering from a venereal disease, than from a bad cold; and both sexes will converse with you freely upon the subject without a blush. I will relate you a case that occurred in my practice a few days ago, that will give you some idea of the morals of this country. A Mexican, of good family and some little wealth, called at my office, and requested me to visit his wife and daughter, who were living some three miles distant from the city, and were both suffering severely from syphilis. I promised to do so next morning. Found the wife a woman of about 35 years of age, and, upon examination, found a large syphilitic chancre, which she informed me was about *two weeks old;* told me she contracted the disease from her husband, and that the husband contracted his from a prostitute in Santa Fé. The husband acknowledged the statement correct. As far as I could judge, there was a perfect good feeling between the parties, and they seemed to look upon the matter simply as a *bad accident.*

I next examined the daughter, a girl about 15 years of age;

found her in bed, perfectly helpless, with syphilitic rheumatism; had been confined to her bed over two months; was very much emaciated; soft palate nearly gone from ulceration, together with the power of articulation; bones of the nose were carious, &c. She informed me that she contracted the disease from a soldier, who kept her as his mistress, some months ago.

Cases similar to the one I have related are by no means uncommon in New Mexico.

Rheumatism, in all its forms, is another disease peculiar to this country. I am satisfied that altitude has but little to do with producing or aggravating the disease, from the fact that about the same proportion of cases are reported to me monthly from the different posts between here and Franklin, Texas; and we find a difference in altitude between the two points of over 3000 feet. All classes—the rich and the poor—the American with all his comforts and luxuries, as well as the poor Mexican, who is obliged to suffer severe exposures, at the same time destitute of proper food and clothing, are liable to suffer more or less from rheumatism.

You will observe, from my list of diseases, that dyspepsia is one of the *ranking* diseases of the country. All classes suffer from it, and, in my opinion, it is produced, to a great extent, from the enormous amount of chile (red pepper) that they consume. They eat it three times per day, if they can get it, sometimes cooked alone and sometimes with meat. If you ask a sick Mexican if he is suffering much pain, the common reply is, "Se, Senor; mi estomago nee duele mucho." Yes, sir; I have much pain in the stomach.

Colds and coughs are also very common here in the winter season. They are produced by living in warm and crowded rooms, poorly ventilated, and exposure to the cold air without sufficient clothing. Another cause of the constant hacking cough that the Mexicans are so subject to, is, the habit both sexes have of constantly smoking their cigaritas. They are generally made of tobacco rolled in *corn husks;* the smoke of the husks has a tendency to irritate the air-passages and produce a cough. Colds and coughs seldom result in anything serious,

although I have seen, in Santa Fé, cases both of bronchitis and pneumonia result fatally.

We often see, in this altitude, cases of scrofula among the lower classes, evidently produced by exposure, bad diet, uncleanliness, living in crowded and badly ventilated rooms, &c.

Since I have been on duty in Santa Fé, I have had to treat among the natives five cases of hemiplegia (all between 50 and 60 years of age)—one case of pariplegia, that proved fatal—one case of malignant erysipelas, that attacked the upper lip and proved fatal in a few days. Cases of simple erysipelas are by no means uncommon. Have operated upon four natives (all middle age) for paracentisis abdominis; three out of the four have since died; the fourth, I believe, will recover. Have met with two cases of typhoid fever during the past 18 months.

I have never seen a case of tetanus, cancer, typhus fever, or malarious disease of any kind that I had reason to believe originated here. We occasionally have epidemics of scarlet fever, measles, small-pox, and whooping-cough among the children, that is truly frightful and fearfully fatal. The cause of the great mortality among children is very evident; poorly clad, poorly fed, and poorly lodged. There is snow on the ground at the present moment, but if you could walk through the streets of Santa Fé, you might see, perhaps, 50 children nearly naked, and many literally so.

You will observe that I have not included tuberculosis among the diseases common to this country. From obsrrvation, I am satisfied that tuberculosis should never originate in New Mexico; but when you take into consideration the manner in which the lower classes live, in total violation of every hygeinic law, it is really surprising that half the population are not suffering from scrofula and pulmonary tuberculosis. Since I have been here, I have had the opportunity of witnessing and making a careful examination in two cases of *genuine* tuberculosis that originated and terminated fatally in Santa Fé. Both cases were women, one 23 and the other 45 years of age; the former was born and raised in this city, and the latter was born in old Mexico, but contracted the disease in Santa Fé. I mention

these cases to show that tuberculosis *does originate* at an altitude of near 7000 feet.

You ask if consumptives removing to Santa Fé obtain decided benefit. If the disease is far advanced, I think not; if in the first stage, I think they do. In my opinion, there are places in this Department far superior to Santa Fé for pulmonary disease. My observation teaches me that the altitude here is too great, the atmosphere too rarefied, and the winters too cold for consumptives.

For over three years past I have been suffering from chronic bronchitis. I will now give you my experience in regard to the different localities in this Department, which I find agrees with the experience of others with whom I have conversed suffering with pulmonary disease.

After having a hard trip across the Plains, riding day and night and coughing most of the time, I arrived in Santa Fé Nov. 12th, 1862 (altitude 6846 feet). My breathing, as I approached the city and after arriving here, became very much labored, my respiration hurried, great oppression about the chest, and a sensation that I should have hemorrhage of the lungs if I made much physical exertion. These symptoms were so distressing, that I requested Surgeon E. J. Bailey, U.S.A., then Medical Director of the Department, to order me immediately down the river. After remaining in Santa Fé three days, I was ordered to Los Perios, a military post situated on the Rio Grande, 79 miles south of Santa Fé (altitude 4932 feet). All the unpleasant symptoms above described began to disappear as I descended the river, and left me entirely while at Los Perios; could see but little improvement in my cough.

About the middle of January, 1863, I was ordered to La Mesilla, N. M.; a town located on the Rio Grande, 280 miles below Santa Fé (altitude 4000 feet). Here my breathing became natural, and my cough began to improve—(there is, however, too much wind and dust at La Mesilla and Las Cruces to make them desirable points for a consumptive). About the 1st of March I was ordered to Franklin, Texas; a delightful military post on the Rio Grande, just opposite the City of El Passo,

in old Mexico; 326 miles south of Santa Fé, and 46 miles south of La Mesilla (altitude about 3700 feet).

I consider Franklin by far the most desirable post in the Department for a consumptive. It is so situated (partially surrounded by mountains) that you escape, to a great extent, the severe winds and dust that you find at most other points on the river.

My health here improved very rapidly, and in less than three months I gained 8lbs. in flesh. The mercury at this post seldom falls below 50 or rises above 90. On the 14th of May, I received an order from the Secretary of War to report for duty to Gen. CARLETON, at Santa Fé. I arrived here on the 24th of the same month, and have been on duty here from that date. For months after my arrival here from Franklin, I suffered, to some extent, the same symptoms as described above; oppression about the chest, hurried respiration, &c.; my cough slightly increased. Last winter I endeavored to run a few rods from my office to the Post Office; was attacked with hemorrhage from the lungs, that confined me to my room for several days. Since then my health has gradually improved; am now quite strong and cough but little; am of the opinion that if I could have remained in Franklin for one year, my health would have been completely restored.

If any of your consumptive patients intend visiting this country for their health, advise them to make Franklin their *head quarters*. If the disease is not too far advanced, it might be of benefit to spend the summer months in Santa Fé, as our summers are cool and delightful. After receiving your letter of Aug. 30th, I wrote to Assistant-Surgeon JOHN BROOKE, U.S.A., on duty at Albuquerque, N. M., also to Assistant-Surgeon A. H. SMITH, U.S.A., on duty at Las Cruces, N. M., to send me reports and statistics from their posts on the points you required; I enclose them herewith for your information. I would here state that Albuquerque is 63 miles south of Santa Fé, altitude 5032 feet, and Las Cruces 277 miles south of Santa Fé, altitude 3970 feet.

Should have answered your letter long ago, but have been waiting for the reports from Drs. BROOKE and SMITH.

Yours very respectfully,

O. M. BRYAN.

LAS CRUCES, Oct. 17th, 1864.

DOCTOR:—It gives me great pleasure to comply, so far as I can, with your request of the 7th inst.

I regret to say that there was no meteorological register kept at this post during the year 1863. When I arrived here there was not even a thermometer in the hospital, and I have just received, for the first time, a hygrometer. I have had no register, except an old one which had been used by the Texans to keep a mess account.

The diseases most prevalent here are as follows, the percentage of each being stated from my impressions as to their relative frequency, not among the troops alone, but among the citizens also:—

Gonorrhœa,	20	Rheumatism,	10
Syphilis,	8	Miasmat. Fevers,	8
Diarrhœa,	20	Bronchitis,	3
Dysentery,	8	Pneumonia,	1
Conjunctivitis,	5		

There are two forms of miasmatic disease prevailing in this locality. The most frequent is a variety of intermittent, usually quotidian in the beginning, but becoming tertian under the influence of quinine, to which it yields completely in the course of six or eight days. It is very rare that all the phenomena of a "chill" are present, the first and third stages being often omitted, and the second stage represented by neuralgia or cephalalgia. Indeed, in many cases the periodicity is the only characteristic which points to a miasmatic origin. The other form is a mild type of remittent fever, showing a strong disposition to terminate in a number of days divisible by seven, and rarely exceeding twenty-one. This form of fever made its appearance about two months ago, and is probably owing to the large amount of rain which has fallen this year, and which has left a great deal of stagnant water in the vicinity. It is much more

prevalent among the citizens than among the troops. Of typhus fever I have not seen a single case; also, not one of simple typhoid.

Genuine pulmonary tuberculosis, I think, *never* originates in this section. I have seen two or three cases of hemorrhage from the lungs, but without any of the physical signs of tubercles. The natives speak of a rare disease which they call *consumcion*, but they locate it in the bowels. From the description, I judge that the term is applied to the wasting away, from chronic disease, of some of the chylo-poietic viscera.

The effect of the climate upon tuberculosis originating elsewhere is eminently favorable. During the eleven months that I have been here, several cases have come under my observation, all of which have been benefited in a marked degree. This season has been remarkably wet, and, therefore, comparatively very unfavorable, otherwise still greater benefit might have been derived. I am inclined to ascribe the advantages of the climate in this respect to the extreme dryness of the atmosphere, rather than to the altitude. The average fall of rain at Fort Fillmore, eight miles from here, is nine inches and a fraction, being less than at any other military post in the United States, Soccon excepted. I have enquired of Dr. Samaniego, of El Paso, with regard to tuberculosis in his locality, and he stated that he had seen only two cases among the natives during a practice of several years. Doubtless the result of protracted observation here would be similar.

I have seen several cases of scrofula among the natives, and both acute and chronic hydrocephalus are not uncommon. The mode of life of the lower class of the natives, which is in defiance of every hygienic law, undoubtedly conduces greatly to this result.

Rheumatism is exceedingly prevalent, both the acute and chronic forms. I think this is owing, at least in part, to the cellar-like character of the adobe houses, and the practice of keeping the floors constantly damp. Troops in tents are not more affected, I think, than they would be in the States.

I have seen but one case of erysipelas since I have been here,

and that was idiopathic. The readiness with which wounds heal has passed into a proverb among the laity. I have not seen or heard of a single case of tetanus. I have now in hospital a case of melanotic cancer, the only one which has come under my observation.

In the absence of meteorological observations for this post, I enclose a copy of some notes of observations at Fort Fillmore, taken some time since from the Army M. Register. The average mean temperature for each month for a period of five years, 1851–5, is given:—

Jan.,	44.47.	May,	71.32.	Sept.,	77.21.
Feb.,	48.93.	June,	80.92.	Oct.,	64.39.
March,	55.96.	July,	83.36.	Nov.,	51.22.
April,	64.39.	Aug.,	79.68.	Dec.,	46.45.

Lat. 32° 13′. Lon. 106° 42′. Altitude, 3937 feet.

This letter was furnished me by Assistant-Surgeon A. H. Smith, U.S.A., on duty at Las Cruces, for the past 13 months.

O. M. BRYAN.

Albuquerque, N. M., October 31, 1864.

The diseases which prevail in this locality are those which are common to most parts of the world, irrespective of climate or situation. So far as my observations have extended, there are no positive endemics. Syphilis, more especially the numerous forms it takes in the secondary and tertiary stages, is probably the most common disease. Rheumatism is very frequent. Pneumonia, bronchitis, dysentery, and diarrhœa, chronic disease of the liver, and the usual eruptive fevers, constitute the larger proportion of the remaining diseases.

Of typhus or typhoid fevers, tetanus, or cancer, I have never seen a case, and but few of erysipelas. The only cases of malarious fevers which have come under my notice were in persons who had had previous attacks; in fact, simply relapses brought on by some exciting cause. The effect of the climate on rheumatism is, I think, unfavorable, especially near and among the mountains, a few miles distant from the river. Genuine scrofula is exceedingly rare, if not entirely unknown. Those cases having the appearances of scrofula generally occur in persons whose

systems are tainted with the poison of syphilis, either acquired by the individuals themselves, or inherited from their parents.

The influence of the climate on tubercular consumption is, I should think, highly beneficial. I judge so from negative evidence, for I have seen but one well-marked case in this place, and that was in a soldier with whom the disease had made such extensive progress before he came to this country, that any other than a fatal result was physically impossible. I have never seen a case occurring among the natives of the country; although the manner in which the large majority of them live—improper and insufficient food, want of cleanliness, exposure to cold, and imperfect ventilation—is highly favorable to the production of tubercular disease. With the predisposing and exciting causes so prevalent, the almost total absence of it can only be accounted for by the elevation, and the peculiar salubrity of the climate.

The mortality among the native population of this country is fearfully large; and, looking at climatic influences alone, perfectly unaccountable. I have never seen statistics, but I should judge from observation that the population if at all on the increase, is very slightly so indeed. There have been no wars largely destructive of human life, and no emigration from the country; and yet the growth of the towns and villages is so slow as to be almost imperceptible, while there are but few of them that cannot boast of more than a century's existence.

A large majority of native children are small and puny at birth, and greatly deficient in *vital force*. This is attributable to two causes. The first is, the criminal practice of intermarriage between blood relations, which exists to a frightful extent, and produces the usual result, of imperfectly developed offspring. This custom is permitted by law, and *sanctioned* by the Church. The second cause is transmitted syphilitic taint. A large number of these children die at birth, or within a few days after. With the exception of a fortunate few, those who survive have insufficient food; their clothing—*if clothed at all*—is alike in the hottest weather of summer and the coldest of winter; through the day they run, unwashed and wild, through all manner of

dirt and filth; and sleep, when the nights are cold, in rooms densely crowded, and an atmosphere fouled by smoke, filth, and a careful prevention of all ventilation. With constitutions thus weakened and robbed of their vitality, it is no wonder that measles, hooping-cough, and scarlatina—diseases which, under the most favorable circumstances, are so often fatal to children —as well as the usual ailments attendant upon dentition, should find hundreds and thousands of easy victims. The puny abortions of humanity are swept away in frightful numbers by these diseases, and whole families are desolated by a single epidemic. If they have the stamina to resist the depressing influences by which they are surrounded in early life, and pass the age of puberty with vitality but little impaired, they nearly always pass into hale and hearty manhood. In fact, a New Mexican who carries a good constitution into middle life, stands a fair chance of seeing fourscore, or even a hundred years. They pass a "green" old age, and reach a *dry* one; and, if Sam. Weller's theory concerning the disappearance of postboys and donkeys be applicable to Mexicans and burros, it is not unreasonable to suppose that these desiccated specimens of mortality "venever they feels themselves getting stiff and past their work, just rides off in the usual way, to take their pleasure in some other vorld."

Could the present inhabitants of this country be entirely swept away, leaving behind them no traces of their superstitions, their follies, or their crimes, and the land peopled with a race who were uncontaminated by hereditary disease, and who lived according to the simplest teachings of nature, the result would be a state of physical perfection and longevity unknown to the modern world.

The above document has been furnished me by Assistant-Surgeon JOHN BROOKE, U.S.A., on duty at Albuquerque, for the past 22 months. O. M. BRYAN.

ARTICLE V.

RUBEOLA COMPLICATED WITH PNEUMONIA.

BY P. J. WARDNER, M.D., of Springfield, Ill.

DR. DAVIS—*Dear Sir:*—In the fall of 1859, I witnessed the death of a promising young man with this serious malady, and was so much interested in the case that I gave much time and study to its treatment the following year. After which I resolved, should occasion offer, to make use of hyosciamus as a fundamental treatment; since which time I have never failed to control the disease with it to my perfect satisfaction. In my hands it has always acted as a specific. Usually, one prescription of it has completely overcome the rapid pulse, hot and dry skin, and pneumonic cough. I have long felt a desire to place the remedy before the profession, but have delayed for the purpose of ratifying my views by a thorough experience, and, having done so, I now offer this as a feeble contribution to medical science. The history of two cases may be advantageous to a clear understanding of its effect, and I herewith submit them:

CASE I. I was called, the 14th of Dec., 1859, to Mrs. N.; arrived at 6 P.M.; found the eruption had disappeared the previous day, and, thinking herself quite well, paid a visit to a neighboring house and returned in the evening, feeling some pain in the head, which increased until 4 in the morning, when sickness and vomiting supervened, and continued increasing up to my visit. I found the pulse beating 150 times per minute; skin hot and dry; lips parched, and tongue dry and red; and the distress at the stomach uncommonly severe, with a deathly sickness, almost incessant vomiting, and some cough. Ordered feet bathed in mustard water, and a cataplasm to epigastrum, to eat pounded ice, and take

℞. Ex. Hyosciamus, ---------- gr. xxiv.
Acetate Morphine, ---------- gr. iij.
Pulv. Acacia, ---------- q.s.
Ft. Pil. No. xij.

S.—Take one every two hours.

15*th*, 8 *A.M.*—Vomiting ceased at 11. Pulse 110; skin moist; cough increased, with expectoration tinged with blood. Continue pills; apply linen saturated in an infusion of hops and vinegar to chest.

6 *P.M.*—Cough decreasing; sputa clearer; pulse 98; skin moist; had eaten a ginger cookie at 5. Continue treatment.

16*th*, 9 *A.M.*—Patient sitting up; sputa clear; bowels moved at 7; pulse 88; skin normal; passed urine twice since last visit.

℞. Quinine Tannate, ---------- gr. xij.
Ex. Hyosciami, ---------- gr. vj.
Confection Roses, ---------- gr. s.
Ft. Pil. No. vj.

Take one every six hours.

17*th*, 11 *A.M.*—Patient about the house. Continue pills one day. Discharged.

Case II. Capt. B. H. broke out with measles, on Sunday; eruption disappeared on Wednesday; on Thursday, was sent out with a scouting party in the rear of Memphis, Tenn.; returned on Saturday, and was placed in hospital and treated by Dr. —— for pneumonia following measles. The succeeding Thursday I was invited to visit the patient. Found a well-developed pneumonia, with restlessness; expectoration dark brown; a small wiry pulse; pallid countenance; a suppression of urine, and a dry, dirty tongue, with tenesmus. Advised,

℞. Ex. Hyosciamus, ---------- gr. xx.
Sulph. Morph., ---------- gr. iij.
Pulv. Columbo, ---------- q.s.
Ft. Pil. No. xvj.

One every fours, alternating with an infusion of juniper berries and buchu.

Four days after, I saw the attending surgeon, who informed me that his patient had from my visit rapidly improved; and I ultimately learned that he was returned to duty the 11th day after my visit.

I have given these two cases, because they were the worst I have treated with the remedy. For young children, I place a small pill of the extract in a cup and add minute doses of anti-

mony and morphine, or either, as the case may indicate, and add from four to six ounces of water. Then give a teaspoonful every two, three, or four hours, according to the circumstances and age of the patient.

SPRINGFIELD, Ill., Jan. 26th, 1865.

CORRESPONDENCE.

NEW YORK.

The Commissioners of Public Charity of this City have been sending, for the past nine months, all of their patients with typhus fever to Blackwell's Island for treatment. They are there placed in canvas tents, similar to the army hospital tents, for two objects: first, to seclude the cases to prevent the spread of the contagion; and, secondly, to give them plenty of fresh air. Dr. A. L. LOOMIS, of this City, has had medical charge, and treated them entirely with hygienic means—giving especial attention to ventilation. The number of cases continuously under treatment, has averaged seventy, or about six hundred in all. And not a particle of medicine, and no stimulants have been employed, and the result, so far, has been but one death in seventeen cases! This is certainly the most remarkable success ever obtained in the treatment of this disease, and seems almost incredible. But the statement is made on the authority of the Medical Board of Bellevue Hospital, under whose supervision these observations have been made. Your correspondent visited, several times during the winter, these typhus patients, and can testify that a large number of them seemed very dangerously sick, yet their only treatment consisted in giving them air as fresh as the heavens could distil it, with simple nourishment, and the result is certainly marvellous, in our eyes.

The number of cases of typhus fever treated in Bellevue Hospital for three years prior to the removal of this class of patients to Blackwell's Island—from June 1st, 1861, to June 1st, 1864—was nine hundred and eight, of which one hundred and

ninety-eight proved fatal, making one death in about four and a-half cases. Excluding those who died within forty-eight hours after their admission, the mortality was about one in six. Dr. MURCHISON, in a report of a large number of typhus treated in the London Fever Hospital, gives a mortality of one in five. Dr. M.'s treatment was the stimulant plan, and so in Bellevue. Dr. LOOMIS was induced to reject alcoholic stimulants from certain views which he entertained relating to the pathology of the disease. He had found, in making autopsies of twenty or thirty of the fatal cases at Bellevue Hospital, that the most constant morbid appearance met with was an intensely congested state of the kidneys. He had also found albumen and casts in the urine during the continuance of the disease, in a large number of cases. From these facts Dr. L. concluded that alcohol was contra-indicated as increasing the burden, and otherwise favoring the congestion of the kidneys. He resolved, therefore, to dispense with it in toto in the treatment of the cases on Blackwell's Island. Whether the very favorable results there obtained are partly due to this fact, or entirely to the hygienic measures, further observations must decide. It is a fact, however, worthy of note, that both Profs. CLARK and FLINT, in their lectures to their respective classes on the treatment of typhus fever, recommended the 'expectant' plan and a resort to stimulants only when great exhaustion supervened. The Profession here are looking with great interest for a paper on this subject, which Dr. LOOMIS has promised to read to the Academy of Medicine at its next meeting.

On visiting the wards of the New York and Bellevue Hospitals, one is struck with the number of cases of lead poisoning which are met with. The attending physicians have no difficulty in tracing the larger number of these cases to the use of beer, the article having been in contact with the lead faucet, or otherwise in lead pipe. It is a sad commentary on this beverage that it is largely chargeable with the damaged livers met with in almost every subject examined in the dead-house connected with these hospitals, but the additional credit of conveying into so many systems the terrible poison of lead. But,

thanks to our science, a sure remedy is found. That iodide of potash will eliminate the poison of lead —as well as mercury— from the system, has been demonstrated too often to leave any doubt on the subject. It is *the* remedy *par excellence* which is always prescribed here in these cases, and continued as long as chemical tests reveal the presence of lead in the urine.

The health of New York, at present, is in a deplorable state. Contagious and infectious diseases abound on almost every street. A Committee has canvassed the City and brought to light *fourteen hundred cases* of variola. And the Mayor has issued a proclamation, ordering every one vaccinated, and revaccination in every case where the operation had not been performed within five years. Typhus fever, typhoid pneumonia, erysipelas, and diphtheria are also very prevalent. Several physicians of the City are now in Albany, laboring with the Legislature to secure a Sanitary Reform, and are abundantly prepared to prove two facts that stand very much in the relation of cause and effect. First, that New York is the filthiest City on the Continent; and secondly, it is one of the most sickly. Figures prove the latter, and residents familiar with different sections of the City testify to the former. Broadway and Fifth Avenue are justly the pride of the New Yorker, and, it is said, are swept every day. But the vastly larger number of streets know no broom, and are strangers to the visits of the scavenger. If something is not done speedily to cleanse the City a pestilence may justly be feared.

The Profession here are already preparing for a large representation at the next meeting of the American Medical Association, in Boston. The stimulus afforded by the last meeting in this City, has aroused many to labor anew to promote the usefulness of our National Medical Council. It is expected, by many, that so large a "turn out" of "Medicos," the "Hub of the Universe" never witnessed as will meet there in June. These Annual Meetings of the Profession can in no wise interfere with the success of GRANT'S plans in conquering an honorable peace, or with Congress, in building a ship canal! If there ever is a time when medical men should meet for mutual con-

ference, it is during this time, when our country is making new and untried demands upon our life-saving profession.

R. P. J.

ARTICLE VI.

ALCOHOLIC STIMULANTS IN TYPHUS & TYPHOID FEVERS.

BY THE EDITOR.

We call the particular attention of our readers to the interesting letter of our New York Correspondent, contained in the present number of the EXAMINER. The facts he gives, in regard to the mortality of typhus when placed in pure air, and under good diadetic regulations, without any medication or stimulants whatever, compared with the mortality of the same disease treated with active alcoholic medication, are of very great importance. The results, as given by our Correspondent, are in exact accordance with what we should have expected; and fully corroborates what we have persistently taught to our classes, both in the clinical wards and in the College lecture-room, during the last fifteen years. We have never been surprised, that under the profuse administration of alcoholic liquids, the mortality of typhus fever patients should be 1 in 6 in Bellevue, or 1 in 5 in the London fever hospitals. For if there is one single fact in pathology well established, it is, that the blood in typhus is imperfectly decarbonized, that its fibrine is impaired in coagulability, and that the functions of the nervous and muscular tissues are greatly depressed.

Equally well is the fact established, by a score of distinguished experimenters, that alcohol, while in the human system, diminishes the decarbonization of the blood, retards the coagulability of the fibrine, produces an anæsthetic or depressing effect on the nervous centres, and diminishes organic changes. Hence we could never perceive a rational indication for the use of alcohol in typhus or typhoid fevers; unless we call that homœopathic *humbug, Similia similibus curantur*, rational. We

have attended the medical wards of the Mercy Hospital, in this City, for the last fifteen years. It is the only public hospital in the City, for the reception of fever patients, from the poorer classes of society; and during the period mentioned, there have been received and treated in its wards several hundred cases of typhus and typhoid fevers. And if all the alcoholic liquors prescribed for internal administration, during their treatment, were collected together they would not fill a half-gallon measure.

The wards were often overcrowded, and though always clean, were by no means capable of extra ventilation.

And yet, if we exclude those cases brought to the Hospital in a moribund condition, and which died in from one to three days after admission, the ratio of mortality, for each year, has varied from 1 in 15, to 1 in 25.

While the facts given, in the letter of our Correspondent, abundantly prove that plenty of pure air and simple nourishment is greatly more successful in the treatment of typhus than impure air and alcoholic medication, they by no means prove that no kind of medication is beneficial in that disease. On the contrary, from our own observations, we are convinced that, if Dr. LOOMIS, in addition to pure air and proper nourishment, had given his patients, judiciously, such medicines as are calculated to counteract septic or deteriorating changes in the blood; to lessen the tendency to irritation and disintegration of the mucous membrane of the ilium; and to increase the sensibility and action of the nervous centres in the more depressed cases, he would have reduced the mortality not only to 1 in 17, but to less than 1 in 20.

Selections.

ON THE PREVENTION OF ZYMOTIC AND CONSTITUTIONAL DISEASES: FEVERS; CHOLERA; CONSUMPTION, &c.

By Dr. E. D. MAPOTHER, Professor of Hygiene, and Medical Officer of Health for the City of Dublin.

The poison of scarlatina seems the most contagious of all its class, having the greatest infecting distance, and fixing with the greatest tenacity in dwellings, furniture, or clothes—fomites they are technically called. For this reason, when the disease breaks out in schools, it is generally politic to close them up entirely for some time. The heat of boiling water destroys the poison, and rooms or clothes in which the poison may be lurking should be thoroughly steamed or fumigated with sulphurous acid emitted from burning sulphur. The disease is inoculable, but the malady so produced being as severe as the ordinary kind, such an operation is not advisable. The most malignant epidemics of this disease from which Ireland has suffered were in 1801–2–3, and 1834.

Measles poison would seem to be nearly as contagious, for instances have occurred of the disease being carried by children's clothes packed in a box and sent from schools where the epidemic had broken out. In America, this disease has assumed a serious aspect, for 22,000 soldiers were prostrated by it during the first year's campaign. I may mention that Dr. Salisbury, of Ohio, has endeavored to prove that the measles poison owes its origin to a fungus which grows upon rotten straw. He inoculated himself, his wife, and twenty-seven other persons with this fungus, and in all an eruption similar to measles followed, and none of these individuals so protected caught the natural measles, which just at the time was strongly epidemic.

In connection with this subject, I may remark that Dr. H. Kennedy has published an interesting case, where a measles-like eruption followed the application of some mouldy flaxseed meal. Several hundred children, in France, are said to have been inoculated with the disease by inserting a tear from a patient into a puncture.

In my Introductory Lecture, I endeavored to impress on you that typhoid fever was about the most preventible of diseases,

yet 140,000 cases occur, and 20,000 at least die of it every year in England, and as the average age of its victims is 21, and all ranks are obnoxious to it, the very flower of the people is included. I will not dwell on the subject further here, save to remark, that in having pustules on the intestinal mucous surface, it resembles the diseases—small-pox, for example—which are characterized by peculiar eruptions on the skin. It is supposed that the seeds of this disease may dry up, and yet, like those of many plants, may germinate when submitted to favorable conditions. There is much greater risk of contagion from the decomposition of the poison in faulty sewers than from the atmosphere about the patients, and its progress is much more virulent when introduced by water drank than by air inspired. I enumerated many chemical destroyers or disinfectants of acknowledged efficacy, but I wish now to add to the list McDougal's fluid (crude carbolic acid), and McDougal's powder (carbonate of lime), which are cheap, convenient, and thoroughly reliable in eradicating this pest "born of putresence."

Typhus has always been Ireland's epidemic enemy, and is still five times as frequent in Dublin as London, in proportion to the population. You all must have read of the lamentable way in which this fever decimated the army, in past centuries, and the contagion was usually introduced in the following way: Commissions were formerly given to those who collected a certain number of recruits, and a promiscuous rabble, reeking with the seeds of typhus, was often obtained by ransacking the lowest haunts, and even the jails. In these latter places, so virulent was the poison, that the judges, witnesses, and others who were engaged in court, rarely escaped, as I could relate to you, if time permitted, from the writings of Lord Bacon. The intensity of the disease would seem now to be much less, for persons in a house with a typhus patient suffer little risk, and those in neighboring houses none. I have investigated some cases in which the inhabitants of a house were reputed to have caught typhus from patients in a neighboring one; but I have always found that the attack was due to an original focus, usually promoted by similar unsanitary conditions. If there be suitable arrangements for the exit of the infected air and the entrance of the fresh, I have never thought it necessary to banish relatives from the patient's house, for their affectionate solicitude is often more valuable than any hired services. I will now recapitulate the circumstances which recent pathologists assert to be promotive, if not productive, of typhus, and you will acknowledge they are all preventible. 1, overcrowding and defective

ventilation; 2, personal squalor, especially the wearing of clothes soaked in cutaneous exhalation, and dark-colored woollen stuffs have by far the greatest power of absording the poison; 3, a low state of system due to scanty or bad food; 4, a medium temperature.

As regards the most plainly malarious of diseases—ague—it used to prevail in Dublin and its vicinity; but owing to improved surface-drainage it has almost wholly disappeared.

The next group of the zymotic diseases is that of which the breathing organs are the seats, and among them influenza is the most clearly epidemic, the most rapidly diffusible, and the most largely fatal, at least 4000 persons in Dublin having succumbed to it in four months of the year 1837. Few old people escape if they are attacked; but Dr. Graves mentions a notable exception. He attended Judge Day, the contemporary of Goldsmith, at the age of 93, and he recovered perfectly. There are reasons for supposing that influenza is due to some specific poison floating in the air, and acting like the emanations from the sweet-smelling vernal grass which gives rise to that remarkable disease, "hay fever."

Whooping-cough, another zymotic, seems to be excited by some poison which acts exclusively on the branches of that widely-distributed nerve, the pneumogastric. That the poison is not solely aërial would appear from a child just born having had the disease, which must have been carried to it in the mother's womb. Quinsy, croup, and diphtheria, are other examples of this group of diseases, and in the prevention of all of them, ventilation, drainage of excreta, and removal of dampness, are hygienic measures of tried and positive efficacy.

Cholera, the most dreaded of the zymotic diseases, which choose as their seat the digestive canal, is, as I endeavored to explain on two previous occasions, communicated by a specific poison emitted from a patient already attacked, and carried to others through the water or air. It, therefore, follows the lines of human intercourse for the most part, but outbreaks do undoubtedly occur which allow of no such explanation. It first appeared in Dublin on 22d March, 1832, and arose in Cork on 12th April, probably from some new source of contagion (perhaps by the steamer which then plied between these cities), for Naas, which lies along the direct road, was not attacked till April 13th. That learned physician, Prof. Aitken, to whose comprehensive treatise I am indebted for many facts, relates the following exceptional case:—"In one of the Western Islands, the most remote from the mainland, the disease suddenly

appeared, where so little intercourse existed with the place that the clergyman of the island continued regularly every Sunday, for 18 months, to pray for King William the Fourth, as if he had been alive, after our gracious Queen Victoria had ascended the throne."

The cholera, which is endemic in these countries, prevails, for reasons I explained before, during hot dry weather, and is in London contemporaneous with the putrefaction and stench of the contents of the Thames, and a death in this city, from the same disease, has just been registered by one of our dispensary medical officers. When our water supply will be available, and our sewerage efficient, we may set at defiance even its awfully aggravated and epidemic form.

I will conclude what I have to say upon those zymotic diseases depending upon the introduction of a specific poison into the blood, by mentioning that Prof. Polli, of Milan, has energetically advocated the use of chemial antidotes to them—such as the sulphites—which are known to possess the power of checking catalytic action. If their curative efficacy be proved, they will become still more reliable in preventing the specific zymotic process consequent on the introduction of the poison.

On another occasion, I dwelt at perhaps sufficient length upon the influence of want of pure air in the production of consumption, which is so potent that the deaths among in-door artisans, such as tailors, shoemakers, weavers, and printers, from this disease are at least twice as frequent as among those who labor in the open air. Much may be done in the way of prevention, both by public and private hygienic measures. Under the former head, I include the opening of public parks and grounds, a close supervision of the establishments where people work in numbers, and the application of the most scientific preventives to the special injuries which many noxious trades inflict, and in such arrangements our French neighbors far excel us. Among means which lie in each individual's power are the fit ventilation of bedrooms, to which sunlight should have free access by a proper aspect being chosen, and free exercise in the open air, with the habit of filling the lungs occasionally to the utmost, for by ordinary breathing their upper parts are not inflated, and remember a disused organ always suffers.

I must mention to you some remarkable facts with regard to the habits of those who have afterwards become consumptive—namely, that they have suffered from that kind of dyspepsia in which acid is too freely produced in the stomach, and that they have exhibited a constant dislike for fatty foods. The peculiar-

ity of their disgestion would then be that while albuminous food would be assimilated, the alkalinity of the saliva and pancreatic juice would be neutralized, and their respective functions—namely, the conversion of starch into sugar, and the taking up of fat, interfered with. The remedial powers of cod-liver oil, which insinuates itself so readily into the absorbents, may depend upon their supplying this want. The preventives of consumption are urged so enthusiastically by Dr. McCormac, that I shall sum up by giving you his list—the respiration of a pure untainted atmosphere by day and night—improvement of the artizan's *locale* and habits, including his bent and sedentary posture—the substitution of steam machinery for dry grinding and stone-chiselling—attention to the digestive and cutaneous functions—improvements in the aspects of houses and sleeping-rooms—increase of out-door pursuits—and lastly, full and free respirations in the open air. Dr. Aitken, Professor of Pathology in the Army Medical School, most justly remarks:—

"Experience has now adequately demonstrated, that the tuberculous cachexia springs from causes over which the public, rather than the medical profession, have control. The physician must be at once impressed with the belief, and encouraged with the hope, that when he acquires the confidence of the public in the practice of his profession, he may exercise a powerful influence for good in teaching how much they may themselves control the ravages of consumption by prudent marriages and sanitary attention to offspring. There are several circumstances which show the great influence of public sanitary measures in controlling the ravages of consumption when these measures are scientifically directed to the preservation of the general health, and especially when men are associated together in great communities—an influence much greater than the best directed efforts of the medical profession can establish through their *materia medica*. It is by the mode of life as citizens of the world, in the social relations of husbands and wives, parents and children, and in the public relation of masters and workmen, that the extent and ravages of consumption are to be controlled. It is by a strict attention to the rearing of offspring, and in the subsequent regulation of food, clothing, cleanliness, occupation, the choice of a profession, and by many other circumstances which have an obvious influence (perhaps at first sight inappreciable) on the maintenance of the general health, that our hopes of success as practitioners of medicine must rest in the prevention of that bad habit of body which developes and propagates the tuburcular diseases in civilized society.

Upon dietetic diseases I made a few remarks on a former occasion, and now, concerning one of them—namely, gout—I can tell you in a very few words all the measures which are preventive by quoting Abernethy's reply when asked, What was a cure for the gout? "Live on sixpence a-day and earn it," for temperance, exercise, and a freely acting skin, are among the hygienic requisites comprised in the aphorism.

As I have endeavored to elucidate, our tissues do not remain permanently ours, but are in health being constantly removed and renewed. Now, when renewal fails, and substances lower in the scale of human chemistry become deposited instead, we give the name of "degeneration" to the condition. The fatty form in which a tissue—the muscular, for example—is either chemically converted into fat, or is removed to give place to that substance, is the most frequent, and chooses such vital organs as the heart, brain (yellow softening), and the kidney (chronic Bright's disease). We are warned that sedentary habits are strongly promotive of this affection, for it was fatal to such prolific writers as Abercrombie, Pereira, and Thackery, and such industrious lawyers as Cresswell and Slade. The influence of the ingestion of too much heat-producing food to the exclusion of tissue-material we have already discussed; but it remains for me to explain the physiological effect of alcohol, which we shall find tends powerfully to the production of fatty degeneration. It checks the changes which our tissues are undergoing, interferes with the due oxidation of the blood, or the combustion of its waste material, and, according to many authorities, supplies material itself for the formation of fat, as more certainly does the sugar, which most of its preparations plentifully contain. Distilled spirits are, for this last reason, less promotive of fatty degeneration than other alcoholic liquors. I shall not now dwell on other evils of intoxication, lamentable though they are, save to say that it is not on the individual alone they work destructive changes, for his offspring, in addition to moral injury, undergo most manifest physical deterioration. In this way alcohol is one of the most powerful causes of that remarkable character of disease in the nineteenth century—namely, that while the mean lifetime of adults is becoming prolonged, that of children is being most perceptibly shortened.—*Dublin Medical Press.*

ON EPIDEMIC CEREBRO-SPINAL MENINGITIS, OR SPOTTED FEVER, WITH CASES.

By JOHN A. LIDELL, M.D., Surgeon U.S. Vols.

A very formidable disease, designated by some as "*spotted fever*," and by others as "*epidemic cerebro-spinal meningitis*," has recently attracted a good deal of attention in professional circles. Of this, the pages of the leading medical journals of this country bear ample testimony. Besides, it has, within a few months past, been the theme of discussion at the meetings of some of the most influential and important of our medical societies; for example, the Philadelphia College of Physicians, and the New York Academy of Medicine. And, of a verity, no one can justly doubt that a disease so sudden in its attack, so rapid in its progress, so fatal in its results, and about which we really know so little, as the one under consideration, is worthy of all the attention which the best minds in the profession can bestow. It is also a subject which challenges the earnest attention of the humbler laborers in the cause of science and humanity; and, actuated by this belief, the writer desires to place the history of the following cases on record, as a contribution, although but a small one, more especially to our knowledge of the pathological anatomy of this obscure, erratic, and formidable disorder.

It should be premised, however, that these cases occurred recently among the inmates of Stanton General Hospital, Washington, D.C., that they occurred in portions of the hospital widely separated from each other, and that no relation by contact, whatever, can be traced between them. The first, in point of time, appeared in ward No. 8, July 28, the second in ward No. 3, July 31, and the third in the hospital guardhouse, August 14. For purposes of description, the second case in the order of time will be presented first, because its general features are more clearly defined than those pertaining to either of the others. It should be stated further, that these are the only cases of this disorder which have ever appeared at this hospital.

Case I. *Cerebro-Spinal Meningitis.*—Private John Davis, Co. E, 8th Vermont Volunteers, 28 years old, and of a scrofulous diathesis, was admitted to Stanton General Hospital July 26, 1864, having an attack of intermittent fever, quotidian in type, and moderate in severity. He stated that, until recently, he had been serving in Gen. Banks' army, Department of the

Gulf. Quiniæ sulph. gr. v, every six hours, was prescribed for him, and a full diet was allowed. Under this treatment he improved rapidly, and his chills ceased after the first day. The quinia was continued, and he bade fair to return to duty speedily.

July 31, *morning.* He remained in bed, complaining of loss of appetite, and of feeling rather weak; his countenance expressed a good deal of anxiety, but there was no heat of skin, nor disturbance of the pulse, nor coating of the tongue. He said that, about midnight, he had been suddenly seized with great restlessness as he lay in bed. This lasted about twenty minutes, but he did not sleep till towards morning. He had no pain. The officer of the day being called, prescribed fluid extract of valerian for him in the night. At the morning visit he was also free from pain. The quinia was continued, and he was directed to keep his bed.

He got on well through the day until about 5½ o'clock P.M., when he was again attacked suddenly with great restlessness, and with irregular convulsive movements, closely resembling those presented by certain cases of hysteria; he became delirious, and uttered loud, shrill screams, at the same time tossing himself about very much, and throwing himself out of bed, unless restrained by the attendants; pupils dilated and symmetrical; no strabismus; pulse 100, and full, but there was no unnatural temperature of the skin; respirations about 14; no vomiting; could not be made to protrude his tongue, nor to swallow anything.

Treatment.—Ice was applied to the head and the spine, a sinapism was placed on the epigastrium, and a large turpentine enema was administered; the enema was repeated in an hour, but without effect in either case. No remedy was administered by the mouth, for the power of deglutition appeared to be lost.

At 7 *o'clock*, the pupils continued dilated; the respirations were 12; the skin was moist; the pulse 90; the restlessness diminished; but still he could not swallow.

At 9 *o'clock*, pupils dilated; respirations 12, but more labored; pulse 90, and weaker; less restlessness, and less screaming. After this, the screams were gradually replaced by low moans. He sank gradually into stupor, and died comatose at midnight, about 24 hours after the beginning of the attack, and about 6½ hours after its character was fully developed. Towards the last he was bathed in perspiration.

Autopsy ten hours after death.—Muscular system well developed; adipose tissue rather scanty; suggillations well marked

in depending portions of cadaver; rigor mortis strong; scattered over the back of the neck and the dorsal aspect of the shoulders are 25 or 30 *dark purple spots*, circular in shape, somewhat raised above the surrounding skin, with a well-defined margin, and varying in size from a mustard-seed to a pea. On incising them, it is found that they present an infiltration of dark-colored blood in all the layers of the skin, and, to some extent, in the connective tissue beneath. The spots are not arranged in groups. On superficial view, they presented considerable resemblance to leech-bites.

Cranium.—While sawing off the calvarium, and, subsequently, while removing the brain, *a large quantity of serum* colored with blood flowed away. It amounted in all to at least *six ounces.* Glandulæ Pacchioni unusually numerous, large, and adherent, for a subject of only 28 years. A moderate quantity of limpid serum beneath the visceral arachnoid membrane, especially about the vertex. The arachnoid has lost its transparency and become more or less opaque (opacified), especially in the same locality. A moderate amount of limpid *serum* in the *ventricles.* The choroid plexus in the fourth ventricle is thickened, pale-red in color, and presents a striking resemblance to a lamina of pale, flabby granulations, but the choroid plexus in the other ventricles presents no abnormity. The cerebrum, cerebellum, pons Varolii, and medulla oblongata were carefully examined. They were moderately congested throughout, but presented no other abnormal appearance.

Spinal canal.—On sawing through the posterior vertebral arches (laminæ) and removing them so as to open the spinal canal almost its whole length, it was seen that the theca vertebralis was distended, or, at least, well filled with serum, notwithstanding the large amount of cerebro-spinal fluid which had escaped while examining the brain. On laying the théca open, it was found that the spinal arachnoid membrane had lost its smooth, shining appearance, and was opacified (pearl-colored), throughout its whole extent. The subarachnoidean bloodvessels were everywhere intensely congested (active hyperæmia). The cerebro-spinal fluid was noticed to contain some thin, white flocculi in the lumbar region, but otherwise it was limpid. The structure of the spinal cord did not present any abnormity.

Thorax.—No pleuritic adhesions; both lungs strongly congested (*passive hyperœmia*); an *apoplectic extravasation* of blood, as large as a walnut, was found in the middle lobe of the right lung, at the fissure between it and the superior lobe; there was a large cicatrix at apex of left lung, and, beneath it, a vomica

inclosed by a thick membranous wall, and containing a quantity of whitish, cheese-like substance. The vomica was evidently undergoing contraction.* The heart exhibited rather more than the normal quantity of fat on its exterior, but in other respects was sound. The heart clots were small. The *blood* was much more *fluid* than natural, and a very large quantity of it flowed into the cavity of the chest on dividing the great vessels, while examining the thoracic organs. The abnormal fluidity of the blood constituted a marked feature of the case.

Abdomen.—The liver and intestines presented no abnormity. The kidneys were intensely congested, especially about the bases and cones of the pyramids, and presented a very dark-red, or almost brown color. The bladder was rather more than half full of amber-colored *urine*, which was found to be heavily loaded with *albumen*, on testing with heat and nitric acid.

Remarks.—The symptoms developed during life, and the pathological conditions revealed by the autopsy, show conclusively that the case belongs to the same category as those which have been described by numerous observers under the name of *cerebro-spinal meningitis.* On this point there is no room for a reasonable doubt. It is necessary, however, in taking a comprehensive view of this case, to observe that the pathological lesions were not confined to the organs located in the cranium and the spinal canal, but that the condition of the *blood* also was *markedly abnormal;* for it showed hardly any tendency to coagulate, remaining *preternaturally fluid* everywhere; while, at the same time, it manifested a very *strong tendency to extravasate*, which was denoted by the *pulmonary apoplexy* and by the *cutaneous purple spots.* It is, therefore, evident that the meningeal inflammatian did not constitute the whole of the case, by a great deal, and that the morbid process, or the disease itself, was not restricted to the cerebro-spinal axis and its meningeal investment. This view of the case is rendered still more probable by the fact that the kidneys were strongly congested, and that an abundant quantity of albumen was found in the *post mortem* urine.

As already stated, the patient died comatose. It might also be remarked, with perfect propriety, that he died asphyxiated, and in the following manner:—The respiration speedily sank to 12 per minute, while the pulse remained 90, and full. The heart continued to act energetically, and to force the blood with

* This was a tuberculous cavity in process of being cured, and was not only interesting *per se*, but also as occurring in a subject whose death was ultimately occasioned by another disorder.

abnormal rapidity into the lungs, while, at the same time, the respiratory movements were failing from increasing paralysis of the muscular apparatus by which these movements are accomplished. The blood, therefore, failing to be sufficiently decarbonized in the lungs, stagnated in those organs, and in this way was produced that passive hyperæmia, or pulmonary engorgement with venous blood, which was witnessed at the autopsy.

This motor paralysis of the muscles of respiration had a central origin, and was doubtless occasioned directly by mechanical compression of certain important nervous centres. The inflammatory process in the cerebro-spinal meninges was characterized by a very copious and rapid exudation of serum; so copious and rapid, indeed, that it might be styled an extravasation without any manifest impropriety. This serous fluid was, for the most part, poured out into the cavity of the arachnoid membrane. Some of it, indeed, was effused into the ventricles and into the sub-arachnoidean spaces, but the rest, and by far the largest part of it, was effused as already stated. This copious exudation of serum (about six ounces were found at the autopsy) in the cavity of the arachnoid membrane would tend to compress the brain and spinal cord alike. However this may be, it is certain that the organs located at the base of the brain and at the upper end of the spinal cord are very susceptible to pressure applied in this way. Thus it happened that the *functions of many nervous centres*, both sensitive and motor, were impaired, and finally *arrested*, by mechanical compression; and prominent among them was the *respiratory tract* of the medulla oblongata. Thus it happened that the patient lost the power to swallow from paralysis of the muscles of the pharynx, and the ability to breathe from paralysis of the muscles concerned in respiration; and he finally sank into stupor or coma, firstly, because the cerebral hemispheres were compressed, and, secondly, from the stupefying influence of the unaerated and highly carbonized blood which was circulating in the cerebral vessels.

The early death in this case, must, therefore, be attributed directly to the rapid exudation of a large quantity of serum into the cranio-vertebral cavity. Now, it is this wonderfully rapid and profuse outpouring of serum, which especially distinguishes the so-called epidemic cerebro-spinal meningitis from all other forms of inflammation of the membranes of the brain and spinal cord. For example, meningeal inflammation produced by violence exhibits an exudation of plastic lymph, or of pus, accompanied, for the most part, with but a small amount of serous effusion; and even in the cases of the so-called tubercular men-

ingitis, the effusion of serum, although copious, always takes place much more slowly, and on that account life may sometimes be prolonged to an indefinite period, even when the amount of the effusion happens to be very great.

Very rapid and profuse effusion of serum is, therefore, a distinguishing feature of the kind of inflammation of the cerebro-spinal meninges now under consideration, and indicates that we must look beyond the membranes of the brain and spinal marrow, into the state of the system at large, if we expect to raise ourselves up to a comprehension of the subject. It stamps this form of meningitis as having a peculiar character, dependent, in all probability, upon a peculiar constitutional condition, which renders it as much a specific disease as erysipelas or rheumatism. The peculiarity of the erysipelatous dyscrasia is, that it predisposes to diffuse cellulo-cutaneous inflammation; of the rheumatic dyscrasia, that it induces fibro-articular inflammation; and the peculiarity of the unnamed dyscrasia which we are now considering is, that it is often associated with a meningeal inflammation, which is characterized by a sudden and copious effusion of serum.

Case II. *Cerebral Meningitis with very Rapid Effusion.*— Private John Minsberger, Co. I, 90th Pennsylvania Volunteers, 40 years old, and sound in constitution, a patient at Stanton General Hospital, convalescent from resection of the left elbow-joint, had recovered so far that the wound of operation was healed, and he appeared to be in good health in every respect, having regained his flesh and strength.

On the morning of July 28th he arose, dressed himself, and went out to the pump for a drink of fresh water, as was his daily practice, and then returned to his ward, being, to all appearance, in usual health.

About 6 *o'clock* he was suddenly seized with a great pain in his back, between the shoulder-blades. He said it felt as if somebody was pressing a bar of hot iron into his backbone. A mustard plaster was applied, and he obtained speedy relief. He had no chill, and the attack appeared to begin without warning. After it was over, he got up and walked about the ward.

About 7 *o'clock* the paroxysm of burning pain returned; the sinapism was again applied, and he got relief in ten or fifteen minutes. He appeared to be sick at the stomach, and tried to vomit. His strength appeared to be good. He declined food, and had no thirst. This paroxysm was somewhat longer than the other. After it was over, he fell into a profuse perspiration, and slept an hour or two.

About 10 *o'clock* he was seized the third time with the same intense burning pain in the dorsal region, which he referred to the backbone. This paroxysm was much severer than the others, and he cried out for anguish. It also lasted much longer. There were no convulsive movements. The medical officer in charge of him, Acting Assistant-Surgeon W. B. Dick, U.S. Army, reported the case to me, stating that there did not seem to be much the matter with him during the intervals between the paroxysms, and I advised cupping of the affected part.

At 11 *o'clock*, on raising him up in bed for the cups to be applied, he was seized with the fourth paroxysm. He fell over on the shoulder of an attendant at once, exclaiming, "Oh, such pain!" and immediately became unconscious, as if in a syncope. At the same time his face became deathly pale, his eyes fixed, the muscular system relaxed, the radial pulse weak and fluttering, and the respiration was suspended, or, rather, he breathed at very long intervals only. I was hastily summoned, and in a few minutes saw him. The pallor of the face and lips had then given place to the livid hue of asphyxia; the eyes were open, fixed, and glassy, the right pupil was dilated, while the left was contracted; the muscular system was completely relaxed; no radial pulse was perceptible, and he took afterwards only three or four long, sighing inspirations, with long intervals between each of them, notwithstanding that ammonia was applied to the nostrils, and Marshall Hall's method of artificial respiration was faithfully tried. He breathed the last time about $11\frac{1}{2}$ o'clock. His lips and face were then very livid. He had no thirst and no unnatural warmth of skin during any part of the five and a-half hours his sickness lasted. He did not exhibit petechiæ or any other kind of spots.

Autopsy by Assist.-Surg. George A. Mursick, U.S. Vol., six hours after death.—Body well developed; no emaciation; no rigor mortis. Upon removing the calvarium, about 4 oz. of blood and serum flowed out. The veins and sinus of the brain were congested with fluid blood. There was a moderate amount of subarachnoid effusion over the hemispheres, and the ventricles contained about an ounce of serum. The spinal canal was opened from the occiput to the sacrum. The spinal cord and its membranes appeared healthy, and there was no congestion of them.

Thorax.—The lungs were intensely congested with venous blood; otherwise healthy. There were about 8 oz. of serum contained in both pleural cavities. The pericardium contained

about 2 oz. of fluid. The heart was slightly hypertrophied; the mitral valves were slightly thickened, the tricuspids were a good deal thickened by a new deposit between the folds of the endocardium. The aortic and pulmonary valves were normal. There was no insufficiency of any of the valves.

Abdomen.—All the abdominal viscera were healthy, except the kidneys; they were in a state of acute congestion, and of a bright maroon color. The urine contained albumen; it was obtained at the autopsy.

Blood.—There was no coagulation of the blood. It remained fluid everywhere, was dark in color, and flowed freely wherever an incision was made into the body.

Remarks.—While perusing the account of the *post mortem* examination of this case, it is probable that the reader has not failed to notice a strong similarity between the anatomico-pathological lesions presented by it and by the preceding case. In both of them a large amount of serous effusion was found in the cranio-spinal cavity, the lungs were engorged with venous blood, the kidneys were congested, the urine contained albumen, and the blood presented a remarkable fluidity in every part of the body. It will thus be perceived that the morbid process was essentially the same in both instances, and that, however much they may differ in other and minor particulars, it was the same disease which brought both of these men to an untimely death.

Among the points of dissimilarity we may notice, first, that in the case under consideration the effusion of serium upon the cerebro-spinal axis and into the ventricles of the brain was much more sudden and rapid than in the preceding case. Indeed, it was so sudden and rapid as to produce "shock." It caused him to fall over on the shoulder of an attendant, and immediately become unconscious, as if in a syncope. At the same time a deathly pallor overspread his countenance. Subsequently his face became livid, in consequence of pulmonary congestion, and in a short time he expired, the respiratory function having failed the first of all. Here is presented before us the whole of that group of fatal symptoms which Dr. Watson and others have described under the title of serous apoplexy. Now, the term serous apoplexy is, doubtless, well enough, so far as it goes. It expresses exactly the way in which death took place in this case, but it gives no idea whatever concerning the morbid process at large, which occasioned the abnormal fluidity of the blood, the albuminous urine, and the tendency to serous extravasations, which were developed in this patient. It

signifies that the patient was stricken down, as by a blow, from sudden effusion of serum upon the great nervous centres, and thus denotes or represents a peculiarity of the particular instance of disease, rather than the disease itself, considered as an entity.

Another point of marked dissimilarity was exhibited in the clinical history. Minsberger complained, at short intervals, of suffering intense pain. He expressed himself as feeling, at times, as if a bar of hot iron was being pressed into his backbone, but had no convulsive movements. Davis, on the other hand, did not complain of pain, but had convulsive movements. But, as heretofore stated, the essential features of both cases present a great similarity to each other.

Case III. *Meningitis.*—Private Simeon Bond, 37th Co., 2d Battalion V.R.C., aged 25, and of feeble constitution, was admitted to Ward No. 7, Stanton General Hospital, Acting Assistant-Surgeon W. B. Dick, U.S.A., on Sunday evening, August 14, 1864, from the quarters of the hospital guard, to which he belonged. He had been unwell for several days, complaining of debility and loss of appetite, and the officer of the day had excused him from duty on that account. He had not been confined to bed. The orderly sergeant thought him to be slightly out of his head on the day before he entered the hospital (Saturday), and noticed that he ate nothing.

When admitted to the hospital, he was feverish, thirsty, and sick at the stomach, but did not vomit; said he had headache, and felt sick and weak; did not have chills, nor complain of any other pain; pulse about 90. Prescribed the neutral mixture and aconite. That night he was restless, and slept but little.

Monday, 15*th*. He was light-headed, and did not seem to realise where he was; he wanted to get up and steal away, but was quiet withal. His head was hot, his eyes somewhat injected, his tongue furred, and his pulse 95, and stronger. Ordered the ice-bag to the head, a brisk purge (pil. cathartic. comp. No. 3), and spiritus mindereri in combination with vin. antimonial. and nitric ether. A dose of morphia was administered in the evening, and he passed a better night. He had pain in the head, but none whatever in the spine or any other part of the body.

Tuesday, 16*th*. Patient lies in a stupor, from which, however, he can be roused without much difficulty; pupils somewhat dilated, and symmetrical; eyes more injected; pulse about 80, and full; respiration slower than natural, but deep and regular; has mild delirium, and complains of headache, but sinks

back into the stupor again as soon as the disturbance ceases; has no spasms of any kind. Ordered the hair to be cropped short; emplast. cantharid., 4 by 6, to nape of neck; sinapisms to the epigastrium and to the inner side of his thighs; and quinia in full doses. His bowels had moved freely.

He did not improve; the stupor grew more profound, and he died comatose that night, about 11 o'clock, something more than 48 hours after he entered the hospital.

No autopsy, for the body was sent away next morning at daylight, for interment at a distance, before it could be conveniently examined. No spots on his body were noticed. The febrile movement was well marked. He did not have any convulsions. There was no symptons whatever indicative of a spinal lesion. The symptoms all pointed to a meningo-cerebral lesion.

Pathology.—On looking into the recent literature of the subject, the writer finds that the anatomical lesions revealed by *post mortem* examination of the cases which he has narrated bear a striking resemblance to, or, indeed, are almost identical with, those presented by Dr. Jewell's case of "*spotted fever*," which is reported in the Transactions of the Philadelphia College of Physicians (vide *American Journal of the American Sciences*, pp. 130, 131, July, 1864). This patient was a male, aged nine years, and died comatose after a sickness of but 48 hours' duration. He had vomiting, headache, dilated pupils, convulsive movements, and petechiæ during life. At the autopsy, made 24 hours after death, the vessels of the dura mater were found to be markedly congested with fluid blood; there was a copious effusion of serous fluid in the subarachnoid spaces and in the ventricles of the brain; there were about two ounces of serum in the pericardium; heart-clots small, very black, softish, and not unlike currant-jelly. The kidneys were strongly congested. The blood in the cardiac veins, in the mesenteric veins, and, indeed, in every part of the body examined, was abnormally fluid. There were some purpurous spots here and there upon the mesentery; and on incising one of the cutaneous petechiæ, it was found to consist of an ecchymosis in the substance of the true skin, and not of a mere effusion beneath the cuticle.

The *pathological lesion* most constantly presented by the disease under consideration appears to be that of the blood. It was exhibited in a marked degree by the several cases cited, and presented a singular uniformity in all of them. No matter whether the disease ran its course in five and one-half hours or two days, the blood retained a remarkable fluidity and a dark

red color after death in both alike. No so, however, with the lesion of the cerebro-spinal meningis. In Case I. we found that the membranes of both the brain and the spinal chord were involved in the inflammatory process. In Case II. the *post mortem* traces of inflammatory action were confined to the brain alone. In Case III., also, the inflammatory lesion, as denoted by the clinical history, affected the brain and its membranes alone. In Dr. Jewell's case, just now referred to, both the brain and the spinal marrow were involved.

But this remarkable disorder may even march on to a fatal termination without the occurrence of inflammation (active hyperæmia) in any part of the cerebro-spinal meninges, as happened in Dr. Levick's case of "*spotted fever*," which is reported in the Transactions of the Philadelphia College of Physicians (vide *American Journal of the Medical Sciences*, p. 136, July, 1864). This patient was but 18 months old, and died after being sick but 14 hours. The case exhibited a very strong hemorrhagic tendency. The autopsy was made 25 hours after death, and showed that the surface of the body was everywhere mottled, that there were vibices on the knees, and petechiæ on the legs; that the vessels of the dura mater were filled with dark fluid blood; that the substance of the brain and medulla oblongata was natural in appearance and consistence; *that there was no effusion in the ventricles, and the most careful examination failed to detect the slightest evidence of inflammatory exudation.* As in the other cases to which reference has been made, the blood presented a remarkable fluidity in every part submitted to examination. The lungs contained a large quantity of fluid blood. The left ventricle of the heart contained two soft clots, each about the size of a pea. The right ventricle did not contain any clots, and the blood therein was thin and fluid, looking not unlike claret wine. Numerous extravasations of blood were also found in various parts of the body. A large ecchymosis was discovered beneath the pericranium, near the saggital suture. The intestines were everywhere dotted with minute extravasations of blood, both on their outer and inner surface. Similar ecchymoses were found on the bladder, in the kidneys, and on the diaphragm. In all the other cases we found an abnormal exudation of serum associated with inflammatory action in some part of the cerebro spinal meninges. In the case of this infant we did not find any cerebro-spinal inflammation whatever; but, in place of exudation of serum, there were numerous and remarkable extravasations of the blood itself, discovered in various parts of the body. It is not improbable that

many cases of the so-called purpura hemorrhagica, especially those occurring during the infantile period of life, and being accompanied with febrile movement, belong in reality to the same category as the disease under consideration. Indeed, the writer himself is inclined to believe that he has seen some cases of this sort in time past.

Is the so-called "*spotted fever*" a form of *typhus petechialis?* Are they cognate diseases? It is true they bear considerable resemblance to each other in two important particulars, viz., both of them are blood diseases, and both of them are apt to be associated with cutaneous ecchymosis (petechiæ). But here the resemblance ends. If we examine their clinical history with a critical eye, we find that they differ from each other as widely as typhoid fever differs from measles. For example, spotted fever often runs its course in a few hours; typhus requires at least several days. Spotted fever is frequently attended with convulsive movements; typhus is never so accompanied. Spotted fever patients often die very suddenly and unexpectedly from coma and asphyxia, the *modus operandi* of which has already been explained; typhus patients do not die in this way. The eruption in spotted fever frequently appears on the first day, as it did in the case of Davis, also in the case of the young lad reported by Dr. Jewell, and in the case of the young child reported by Dr. Levick; while in typhus the eruption does not appear till the end of a week or more from the commencement of the prodromic symptoms. Thus clinical observation shows not only that these two diseases are not identical, but that they are in reality entirely distinct from each other.

What then is the true nature of the disorder under discussion? This question does not admit of a complete answer in the present state of our knowledge; but, at the same time, as has already been shown in this paper, there is good reason to believe that the so-called spotted fever, or epidemic cerebro-spinal meningitis, is a *specific disease* dependent upon a specific dyscrasia; that it is also a *blood-disease*, in which respect it is analagous to all other dyscrasic disorders; and that it is often accompanied with a sudden and copious exudation of serum into the cranio-vertebral cavity, or with extensive extravasations of the blood itself in various parts of the organism; *vide* the pulmonary apoplexy in the case of Davis, and the numerous and extensive ecchymoses in Dr. Levick's case.

In the course of the discussion on cerebro-spinal meningitis before the New York Academy of Medicine, April 20, 1864, Prof. Clark stated that he "was inclined to doubt whether the

right name had been found for the disease; in some cases the brain and spinal cord were involved in the inflammation, and so far the term cerebro-spinal meningitis was correct enough; but in other cases the inflammation was limited to the brain; while in still other cases the brain and cord escaped altogether, and the inflammation spent its force upon the pericardium, pleura, and even upon the lungs. That being the case, the disease, in his opinion, was due to a condition of the system in which there was a tendency to inflammation, and the inflammation might show itself in one part of the body or another, dependent upon circumstances which we cannot at first appreciate." (Vide *American Medical Times*, May 14, 1864, p. 237.)

The results of our investigations strongly corroborate the views of Prof. Clark. For we found in Case I. that the disease manifested itself locally, by producing an inflammation of the arachnoid membrane of both the brain and spinal cord; in Case II. that the disease expended its force mainly on the cerebral arachnoid alone; in Case III. that the disease made its advent by impairing first the functions of the brain as the organ of the mind, subsequent to which fatal cerebral meningitis supervened, the spinal marrow being not involved in any way; and in Dr. Levick's case, that the disease expended its force in producing extravasations of blood beneath the pericranium, the diaphragmatic pleura, in the coats of the intestines, in the kidneys, and on the bladder, there being no inflammatory action whatever about the brain, spinal cord, or any other organ in the body. The conclusion is irresistible that the disease itself consists of a pathological condition of the system at large, whereof the various local lesions enumerated above are but the accidental manifestations. It has also been conclusively shown that this morbid condition of the system is accompanied by a strongly marked pathological condition of the blood, the most striking feature of which is, that its coagulability is almost entirely destroyed.

Is this disorder communicable from one person to another? On this point the evidence furnished by our observations is entirely negative in character. As already stated, each of these cases occurred in a distinct portion of the hospital, and no relation by contact can be traced between them. The disease did not spread to the other patients occupying the same ward, or the same quarters, in a single instance. But this fact does not by any means prove the disease to be uncommunicable, for it should be borne in mind that these hospital wards are as thoroughly ventilated, clean, and wholesome as our present knowledge of hygiene enables us to make them. It cannot be ex-

pected that diseases which are not strongly contagious will spread in such a place and under such circumstances. At the same time the writer does not doubt that, under circumstances favoring its development, the disease may radiate from the localities in which it first appears, and thus conform to one of the laws regulating the spread of infectious disorders in general; and he also does not doubt that, under favoring circumstances, it may be communicated from one person to another.

The cases which came under our observation were probably produced by some kind of an epidemic influence, which we are not able to appreciate with our present lack of knowledge concerning this disease, as well as the occult causation of epidemic diseases in general. The *influenza* did not prevail at the time; indeed, there was not a case of influenza then in the hospital. This fact is mentioned because some have been inclined to think that spotted fever is only and exalted form of influenza.

While speaking of the epidemic origin of the disease, as it appeared at Stanton Hospital, it is worthy of remark that our first case, in point of time, occurred July 28th, and terminated fatally in five and one-half hours; that our second case occurred three days afterwards, July 31st, and terminated fatally in twenty-four hours; and that our third case died August 16th, after three days' sickness. This progressive diminution in the severity of type of the disorder from the first to the last case is either a remarkable coincidence, or (what is more probable) it shows that the special zymosis which produced the disease in question was also progressively diminishing in point of intensity.

Treatment.—Candor compels us to state that the remedial measures employed in our cases were not productive of much benefit. Davis lost the power of deglutition so early that the range of medication in his case was very much restricted. Even the stimulating enema failed to operate, apparently from paralysis of the muscular coat of the large intestine; and when it was repeated a short time afterwards there was still no effect, in all probability for the same reason. There is no reason to believe that the ice-bags applied to his head and spine did any good. In the case of Minsberger, the counter-irritation (sinapisms) seemed to afford some relief from the excruciating pain between his shoulder-blades; but, at the same time, it is not by any means certain that his paroxysms of pain were either shortened in duration or moderated in severity by these applications. In the case of Bond, neither the brisk purge, nor the aconite, nor the antimony, nor the blister on the neck appeared to have any effect in retarding the onward progress of the disorder.

The only remedy which seemed to benefit him was morphia, which, administered in the evening, enabled him to pass a better night. But notwithstanding this, he also, like the others, finally sank into stupor and died comatose. This analysis of the treatment employed in these cases has been made for the purpose of illustrating an instructive part of their clinical history.

All of these patients died from effusion of serum upon some part of the cerebro-spinal axis. Now, any plan of treatment, to have been successful, must either have prevented the effusion of the serum, or caused its absorption prior to the occurrence of fatal compression of the nervous centres. The remedies which we employed did not accomplish either of these desirable results. The question next arises whether there is any therapeutic agent at our disposal suitable for such a purpose. In the opinion of the writer we have such a remedy, and it is opium. It has for a considerable time been well known to many persons that opium, especially when administered in large doses, possessed a marvellous power in the way of arresting exudation from serous membranes. This property of opium has probably been most strikingly exhibited in the treatment of peritonitis with a suppurative tendency; for example, puerperal peritonitis; but its efficacy has also been fully proved in the management of inflammations of the thoraric serous membranes. But at a time like the present, when opium or its chief alkaloid is so extensively and successfully employed in surgical practice for the cure of traumatic peritonitis, it is not necessary to say any more on this point. And, entertaining these views, the writer is fully determined to give opium a fair trial in the treatment of spotted fever, if it should ever be his misfortune to again encounter that formidable disorder.

But the employment of opium in the treatment of epidemic cerebro-spinal meningitis is no new thing. Dr. Miner long ago strongly recommended its use in large doses. He said: "A few cases imperiously required half an ounce of the tincture of opium in an hour, or half a drachm in substance in the course of twelve hours, before urgent symptoms could be controlled; and even some cases required a drachm in the same time. All those patients whose symptoms were promptly met with opium invariably recovered." (Vide *Miner on Typhus Syncopalis.*)

According to Dr. Hartshorne: "The only treatment in which, after considerable experience, Boudin placed any confidence was that in which opium was used remedially. An *opiate sleep* was often followed by convalescence." (Vide *Am. Jour. of Med. Sciences*, p. 94, July, 1864.)

Not long since Dr. Walter F. Atlee treated ten cases of epidemic cerebro-spinal meningitis at St. Vincent's Home, in Philadelphia, with gratifying success, although nine of them were young children from two to four years of age. The treatment consisted in the application of irritants to the back, and in the administration of opium, the patients' strength being supported at the same time with brandy, wine-whey, and essence of beef. (*Op. cit.*, p. 95, July, 1864.)

Some have expressed a great deal of confidence in the efficacy of sulphate of quinia administered in large doses. But according to our experience, however useful this remedy may be for the removal of a malarial complication, it exerts but little if any influence upon the disease itself. For in the case of Davis the disease appeared in a very severe form while he was taking five grains of quinia three times a-day, and in the case of Bond large doses of that remedy did not produce any perceptible effect whatever.—*Am. Jour. Med. Sciences.*

TWO CASES OF PYÆMIA, OR PURULENT INFECTION, WITH RECOVERY; IN WHICH THE BISULPHITE OF SODA WAS ADMINISTERED.

Communicated by WALTER F. ATLEE, M.D.

The history of the following two cases is communicated because I am fully persuaded that they were cases of pyæmia. They were treated by a new method, from which extraordinary results are said to have been obtained in other countries; and by all other treatment, so far as I have seen, well-marked, undoubted cases of pyæmia have invariably proved fatal.

Nélaton says that *pyæmia is always fatal*, and adds that in the cases of cure which some surgeons suppose that they have seen, they allowed themselves to be imposed upon by certain circumstances which may lead, in these cases, to an error in diagnosis. (*Elemens de Path. Chirurg.*, vol. i. p. 167.) The authors of the *Compendium de Chirurgie Pratique* (A. Bérard and Denonvilliers) say that the gravity of a disease, the principal condition of which is the infection of a liquid, destined to circulate through and nourish every part of the body, is at once understood—"*such, in fact, is its gravity, that art has so far remained powerless against it.*"—(p. 386.)

I have thought it proper to cite these authorities as to the invariable fatality of pyæmia, inasmuch as it is supposed by per-

sons of comparatively small experience and powers of observation to be not unfrequently cured. I have seen, myself, a large number of cases of pyæmia, and the two which are here reported are the only ones that recovered.

The treatment instituted in these cases was in accordance with that first recommended and practised by Prof. Polli, and brought to the notice of the profession in this country in the numbers of this Journal for October, 1862 (p. 513 *et. seq.*), and for April, 1863 (p. 467 *et. seq.*). Prof. Polli has succeeded in establishing that not only does sulphurous acid possess the property of arresting fermentation, and neutralizing catalytic action, but that its alkaline and earthy compounds have also the same power, and, moreover, that they can be administered with the greatest impunity, even in large doses. Pyæmia, or purulent infection, which latter name is preferable, though the other must be employed, since it is generally adopted in this country, is a disease that depends essentially on the presence in the blood of an organic poison, which acts as a ferment, and multiplies itself. Until the announcement of the discovery of Prof. Polli, no substance was known that could destroy a catalytic poison, without, at the same time, so altering the blood itself, as to render it incapable of performing its vital functions. Bernard has declared that the neutralization of such poisons is impossible. (*Lecons sur les effets des substances toxiques et medicamenteuses*, p. 99.)

Case I. Reported by Joseph B. Roe, M.D., A.A. Surgeon, U.S.A. Ezra Reagles, private, Co. A, 36th Wisconsin, aged 30, by occupation a farmer, was admitted to Ward 3, Satterlee U.S.A. General Hospital, West Philadelphia, Pa., August 20, 1864, from Field Hospital, City Point, Va. Wounded at Deep Bottom, Va., August 16, 1864, by a minie ball, which fractured metatarsal bones of left foot. Patient and wound in good condition at time of admission, and continued so until August 28th, when gangrene set in. From this date until September 4th, the gangrene rapidly spread, so that nearly the whole of the upper part of the foot was involved. Sugar, which had heretofore been so successfully used in the hospital, in the treatment of all gangrenous wounds, was applied at the first appearance of the gangrene, but to no good purpose. The character of the wound and the condition of the patient became such, that it was decided to amputate the foot, which was accordingly done, September 5th, about three inches above the ankle-joint. The patient did remarkably well until September 12th, when he had a violent chill, and complained of severe pain, upon pressure, over

the region of the liver. The chills returned on the 13th, 14th, and 15th. The flaps had, by this time, sloughed away so as to leave about two inches of the bones exposed. At the first appearance of the chills one (1) drop of nitro-muriatic acid, in the infusion of quassia, was administered thrice daily, with beef tea, milk punch, &c., until Sept. 14th, when, at the suggestion of Dr. Walter F. Atlee, eight (8) grains of the bisulphite of soda was ordered every four hours. From the 18th the patient commenced rapidly to improve, and no untoward symptoms made their appearance up to November 8th, 1864, when the patient was transferred to Ward A, in consequence of the vacation of Ward 3. The general health of the patient at this time was remarkably good, the exposed bones had exfoliated, and the stump nearly healed.

Case II. Reported by A. A. Smith, M.D., A.A. Surgeon, U.S.A. Private John C. Friesman, Co. H, 8th New York Heavy Artillery, aged 51, and by occupation a painter, was admitted from Field Hospital, City Point, Va., August 20th, 1864, with a gun-shot flesh wound of both legs, received at the battle near Malvern Hill, Va., August 16th, 1864. The ball—minie—passing transversely through the middle of the middle-third of the left leg, between the soleous and gastrocnemius muscles, producing a severe flesh wound; thence through the middle-third of the right leg, anterior to the tibia, producing a slight flesh wound, and denuding the tibia of periosteum, along the track of the ball. On admission the patient's general health was considerably impaired by the exposure and hardships of active field duty. Wound suppurating very little, and the discharge was of a very unhealthy character. Ordered tonics, stimulants, and water-dressings. Up to October 2d, nothing of importance occurred. The patient's general health seemed to suffer from the suppuration, which became excessive after the twelfth day. On the morning of the 2d, he had a severe chill, followed by slight febrile reaction, then a profuse clammy perspiration, and low, muttering delirium; features blanched and sunken. Oct. 3d, 4th, 5th, 6th. Heavy chills and delirium. The patient apparently sinking rapidly. Oct. 7th, 8th. Chills not so marked; less delirium, and general appearance improved. Oct. 9th. A very light chill, and very little perspiration. Immediately after the appearance of the first chill, on the 2d of October, the bisulphite of soda was given in gr. xx doses every two hours, which was continued until the 12th, after which twenty grains were given twice a-day until the 1st November, when it was stopped. Milk punch, beef es-

sence, and f℥j of the following mixture every two hours were also given: Quinia sulph. gr. xxiv, tinct. ferri chlor. f℥ss, syr. simpl. f℥iss, aqua cinnam. f℥iv. Oct. 12th. A slight rigor; suppuration from wound a little more healthy; general appearance decidedly improved, and some desire for food. Oct. 20th. *Decided* improvement; very little suppuration, and the wound granulating; no return of chill, and the mind perfectly clear since the 12th inst. Nov. 1st. Able to sit up; wound healing rapidly. Nov. 17th. General health much better than when admitted; appetite good, and wound closing rapidly; walks about on crutches.—*Am. Jour. Med. Sciences.*

ON THE TRANSFORMATION OF ALKALINE SULPHITES IN THE HUMAN SYSTEM.

By M. CAREY LEA.

In connection with some interesting observations on the physiological effects of the alkaline sulphites when taken into the human system, as made by my friend Dr. W. F. Atlee, it has appeared to me that a brief account of a few chemical examinations made upon the same subject would not be altogether devoid of interest, especially as the indications are that these remedies are destined to play an important part in the relief of certain obscure and fatal forms of disease.

My first experiment was directed to observe, if possible, whether, after the administration of an alkaline sulphite, any free sulphurous acid was eliminated in the stomach; and if so, whether or not this would be reduced in that organ to the form of sulphydric acid or not.

As the gases set free in the stomach are carried off by the breath through the mouth, the following arrangement was adopted: a little very dilute ammonia was placed in a test-tube, and then, through a bent tube, the breath was driven through, in a period of from three to five minutes. The liquid was then tested by a lead-salt for HS, and afterwards with zinc and chlorydric acid for sulphurous acid, the hydrogen liberated being conducted over paper moistened with a lead-salt. Other portions were further examined by boiling with nitric acid and testing with chloride of barium, for sulphuric acid resulting from an oxidation of sulphurous acid.

The first trial was made two hours after swallowing thirty-

three grains of bisulphite of soda. Neither the presence of SO_2, nor of HS could be detected by the foregoing methods.

In the second trial the sulphite was taken in a highly alkaline form. Thirty-three grains of monosulphite of soda in solution with twelve grains of bicarbonate of potash were swallowed, and three-quarters of an hour afterwards the breath was tested as before. No HS could be detected, but there were extremely faint traces of SO_2.

As respects the condition in which a sulphite would pass entirely through the human system, there could evidently be but two alternatives: it must either pass through unchanged, or must undergo oxidation and pass out as a sulphate.

In order to determine the point, the urine was examined. One hundred grains of monosulphite of soda were taken daily, in three doses of thirty-three grains each, and a large number of examinations were made of urine voided at various hours in the day. About two ounces were used in each trial, and the examination was made to ascertain whether any alkaline sulphite could be detected.

When the administration of the salt was first commenced, only very faint traces of sulphite could be detected, almost the whole appearing to be oxidized in the system; but on each succeeding day, the tests indicated an increasing quantity of sulphite, until large black stains were regularly obtained upon lead-paper, by exposure to the sulphydric acid obtained by the reduction of the sulphite.

In view of the powerful deoxodizing properties of the sulphites, it seemed probable that their administration would cause a depression of circulation, and observations were made to ascertain whether this would be the case. To afford a term of comparison, an observation was made on the state of the pulse two days before commencing the treatment:—

	Pulse at end of morning.	Pulse at end of afternoon.
Nov. 11. Before the treatment was commenced.....	78	73–4
" 13. Treatment commenced.....	81	74
" 14. " continued.....	81	75

The sulphite seems thus to have been without effect, or if any result was produced, it was rather a slight acceleration than a depression.

The conclusions to be drawn from the foregoing—at least so far as one case is capable of leading to conclusions—are that: 1st, when sulphite of soda is taken into the stomach, no sulphydric acid and a mere trace of sulphurous acid are evolved in the

free state; 2d, that whilst the greater part of the sulphite is oxidized in passing through the system, some portion escapes this transformation, especially after the first few days of regular administration, and appears in the urine as unaltered sulphite; and 3d, it would seem to be indicated, *in this particular case*, that one hundred grains a day is as much, or more, than is capable of transformation in the system, and, therefore, of exercising its particular function, since even the whole of that was not found to have undergone oxidization. As the sulphite is often given with great advantage in much larger doses, I draw the last conclusion with great reservation, and not decisively. It seems probable (as indicated in a case which Dr. Atlee has mentioned to me, and which is published, p. 84) that very much larger doses are supported easily, and given with advantage. As the excess, if any, does not appear to be hurtful, I do not wish to be understood as arguing against the administration of the amount now deemed proper. This point, however, in its bearing upon actual practice, seems to deserve examination.

Further, the fact that a substance so readily oxidable as a sulphite, can be taken up by the circulation, and pass through it, unoxidized, as respects any portion of it, and be eliminated unchanged by the kidneys, appears to be very remarkable. It was, however, proved by too many separate and decisive experiments to be left in any doubt.

Finally, I may remark to those who may wish to repeat these experiments, that, unless proper precautions are taken, the reactions are easily missed, at least in those instances where the amount of unchanged sulphite voided is very small. My first trial was made on a few drachms of liquid, and I failed to get any reaction. On the following day, by using several ounces, I obtained a faint but unmistakable reaction, and this with each succeeding day became more and more pronounced. The materials should be placed in a flask with a narrow and very long neck. A small lump of zinc is to be introduced, and lastly a few drops of pure chlorhydic acid, enough only to cause a very slight action, accompanied by an almost imperceptible effervescence. A piece of bibulous paper, moistened with solution of acetate of lead, is to be inserted into the neck of the flask, so as almost to close it. The whole is then to be set aside for several hours, after the lapse of which the paper is to be examined for the characteristic stains of sulphide of lead.

It is to be observed that there are two forms in which sulphur may find itself in the urine, apart from any direct administra-

tion of substances containing it. It is always present in the form of saline sulphates. Upon these substances nascent hydrogen has no reducing effect. But sulphur is contained also in albumen, which in certain forms of disease may be present in the urine. The formula of albumen, according to Liebig, contains three equivalents of sulphur, amounting to nearly two per cent. It appeared to me to be a matter of interest to determine whether albumen was capable of giving up a portion of its sulphur to the reducing action of zinc and chlorhydric acid, and thus to settle the question whether its presence could embarass the investigation as to the presence of sulphites. A considerable quantity of albumen was introduced into a flask and exposed to the action of zinc and chlorhydric acid for many hours. An almost imperceptible stain was found upon the lead paper. Now the ingestion of one hundred grains of sulphite per day—less than the usual dose—I have found to be capable of charging the urine so heavily, with undecomposed sulphite, that lead paper is visibly darkened in a few seconds, and by longer exposure becomes perfectly black. Whilst, therefore, albumen seems not entirely incapable of acting upon lead paper, its influence is not such as to disturb the applicability of the test, inasmuch as an aqueous solution certainly containing ten times as much as could be found in a like bulk of albuminous urine, gave only almost imperceptible indications.—*Am. Jour. Med. Sciences.*

PERMANGANATE OF POTASH AS A REMEDY FOR DIPHTHERIA.

By LOUIS MACKALL, Jr., M.D., Georgetown, D.C.

Having used for several months past the permanganate of potash as a remedy for diphtheria, and being convinced of its great efficacy, I feel justified in calling the attention of the profession to the use of this agent in this fatal and hitherto unmanageable disease.

After using faithfully all the remedies, both general and local, which have been extolled for the cure of diphtheria, and having seen so little good result from their use, I had lost, in a great measure, all faith in such remedies, and had come to the conclusion that the best treatment was to support the patient with nourishment and the free use of stimulants. On reading, in the January number of the *American Journal*, an article by Dr.

Samuel Jackson on the therapeutical application of a solution of the permanganate of potash and of ozone, it occurred to me that this agent might be beneficial in the treatment of diphtheria. Shortly afterwards I had an opportunity of making a trial of it in a severe case. A young girl about eleven years of age, was seen by me after being sick several days. The tonsils, soft palate, and fauces were covered with an ash-colored deposit; the glands beneath the jaw were much swollen, with frequent pulse and hot skin; she was treated for several days with chlorate of potash and the tincture of the chloride of iron. Muriatic acid and tincture of iron, in equal parts were applied locally. But finding the disease on the increase, I changed this treatment and used the permanganate of potash both internally and as a local application, the latter in the proportion of ℥j to water Oj. She took a teaspoonful every three hours of the strength of ℥j to water Oiss. On the second day after beginning this treatment, the improvement was very marked, and she speedily recovered. The false membrane was detached and the mucous membrane presented a healthy appearance in three or four days.

Since then I have treated all the cases of diphtheria (some fourteen or fifteen) which I have seen with this agent, and am more and more convinced with every case, that we have in the permanganate a most valuable remedy. Such is my faith in its power to arrest the extension of the pseudo-membranous formation, and to remove it when formed, that I now feel little apprehension in any case if called to see the patient before the disease has extended to the larynx or paralysis has occurred. Indeed, in those almost hopeless cases in which it is evident that the disease has reached the larynx, as shown by suppressed cough and voice with paroxysms of intense dyspnœa, I have seen under its use three children recover. With a considerable experience in the disease I had previously known only one child to recover under similar circumstances. These three cases were all of the most unfavorable character; the membranous formation was abundant; the laryngeal symptoms very distressing. In all of the cases I expressed a very gloomy prognosis, as all similar cases, with the one exception above mentioned, had proved speedily fatal. In these cases I also used emetics, but I think the successful result should be attributed to the permanganate, as I had used emetics in all such cases before without benefit.

When the disease has extended beyond the reach of this remedy locally applied, of course a successful result could not

reasonably be expected from its use; but I believe that with this agent we can prevent diphtheria from progressing to a fatal termination, provided the cases can be attended to before the larynx becomes involved.

Its tendency to attack the mucous membrane of the pharynx prior to its extension to the larynx is characteristic of diphtheria, and I feel assured from my experience that if the permanganate of potash is used in this stage, that it will not only control its further development, but will speedily remove all traces of the disease by restoring the mucous membrane of the throat to a healthy state.

The inferences that it is intended should be drawn from the foregoing remarks are: that if diphtheria arises from a specific cause affecting the whole system, then the permanganate of potash may be regarded as the antidote to this poison; or if the fatal tendency is thought to be caused by or to be dependent on the local affection of the throat, then the local affection may be removed and the fatal tendency may be obviated by the use of this remedy.

It may be well to state that I have never seen any unpleasant effect from the use of the permanganate, even when administered to young infants (the solution should be weakened by increasing the quantity of water to Oij to permanganate 3j in very young children); and I have observed that when locally applied it causes less distress than almost any other remedy.—*Am. Jour. Med. Sciences.*

Book Notices.

Transactions of the American Medical Association. Vol. XV. Philadelphia: Printed for the Association, for 1864.

The Annual volume of Transactions for 1864, though smaller than many of the earlier volumes, is published in excellent style, and contains much matter of interest to the profession. Besides the ordinary record of the Proceedings of the Meeting in New York, in June, 1864, the Code of Ethics, and the full list of Members, the volume contains the following reports and papers:

Death from Air in the Circulation, introduced through the Uterine Sinuses. By H. O. Hitchcock, M.D., of Michigan.

A Modified Ring Pessary for the Treatment and Cure of

Anteflexion and Anteversion of the Uterus. By H. O. Hitchcock, M.D., of Michigan.

Report on the Use of Pessaries. By Augustus K. Gardner, M.D., of New York. With Illustrations.

A Paper on the Relations of Female Patients to the Hospitals for the Insane; the Necessity, on their Account, of a Board of Consulting Physicians to every Hospital. By Horatio R. Storer, M.D., of Boston.

Report on the Practical Working of the U.S. Drug Law. By Edward R. Squibb, M.D., of Brooklyn, N.Y.

On the Naturalization of Cinchonæ on the Eastern Continent. By J. Macgowan, M.D.

Report on Compulsory Vaccination. By James F. Hibbard, M.D., of Indiana.

Report on Military Hygiene. By E. Andrews, M.D., of Ill.

On the Physiological and Dietetic Relations of Phosphorous. By John H. Griscom, M.D., of New York.

Report on the Medical Topography and Epidemic Diseases of the State of Rhode Island. By Charles W. Parsons, M.D., of Providence, R. I.

Report on the Mortality of the City of New York. By Cyrus Ramsey, M.D., of New York.

On the Causes tending to Promote the Extinction of the Aborigines of America. By Jonathan Kneeland, M.D., of N.Y.

On the Pathology of the Lateral Curvature of the Spine. By Charles F. Taylor, M.D., of New York.

Laryngeal Probe Syringe. By R. Macfarlan, M.D., of N.Y.

On Iridectome. By Louis Elsburg, M.D., of New York.

Report on the Treatment of Congenital Fissure of the Palate by Mechanical Appliances. By Norman W. Kingsley, M.D., of New York.

Report on Puerpural Tetanus. By D. L. McGugin, M.D., of Iowa.

Prize Essay.—On the Pathology of Jaundice. By S. Fleet Speir, M.D., of Brooklyn, N.Y.

It will be seen from this list of contents, that the volume contains a considerable variety of topics, all of which are ably dis-

cussed, and present matter of interest to the whole profession. The principal defect in the volume, is the inadequate reports of the doings of the several Sections. It is in these sub-organizations that all the scientific work of the Association is done. In them the reports and papers are read, examined, and the questions which they suggest are discussed. Each of them should be supplied with a secretary or reporter capable of keeping an accurate, though condensed, record of all the debates, as well as the mere votes. Such record would not only preserve the important facts, suggestions, and opinions developed in the discussion of the several papers read, which would often be of far more value than the papers themselves, but they would greatly add to the inducements calculated to bring the best men in the profession into active participation in the doings of those Sections. We trust that measures will be taken to secure a much more efficient organization of the several Sections at the coming meeting, than at any of the previous ones.

Medical Lexicon. A Dictionary of Medical Science; containing a concise explanation of the various subjects and terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, and Dentistry; notices of Climate, and of Mineral Waters; formula for Officinal, Empirical, and Dietetic Preparations; with the Accentuation and Etymology of the Terms. And the French and other Synonymes; so as to constitute a French, as well as English, Medical Lexicon. By Robley Dunglison, M.D., LL.D., Prof. of Institutes of Medicine, &c., in the Jefferson Medical College of Philadelphia. Thoroughly Revised and very greatly Augmented. Philadelphia: Blanchard & Lea. 1865.

This is a new edition of Dr. Dunglison's well-known Dictionary of Medical Science. It is published in excellent style, bound in leather, and contains over 1000 closely printed pages. It is undoubtedly the most complete and useful Medical Dictionary hitherto published in this country.

For sale by W. B. Keen & Co., 148 Lake Street, Chicago.

Gun-Shot Wounds and other Injuries of Nerves. By S. Weir Mitchell, M.D., George R. Morehouse, M.D., and William W. Keen, M.D., Acting Assistant-Surgeons U.S.A., in charge of U.S.A. Wards for Diseases of the Nervous System, Turner's Lane Hospital, Philadelphia. Philadelphia: J. B. Lippencott & Co. 1864.

This is an unbound monograph of 164 pages; containing much matter of interest, especially in relation to certain pathological conditions of the nervous and muscular systems, and their treatment. For sale by S. C. GRIGGS & Co., 41 Lake St., Chicago.

GLAUCOMA: Its Symptoms, Diagnosis, and Treatment. By PETER DIREK KEYSER, M.D. Philadelphia: LINDSAY & BLAKISTON. 1864.

This is a monograph of 88 very neatly printed pages, in paper cover. The author gives a very interesting summary of what is known in regard to causes, symptoms, and treatment of glaucoma. It is worthy of a careful perusal.

Editorial.

NOTICE.—Our readers are all aware that during the last two years the prices of labor and paper have more than doubled. And by an estimate just given to us by our printer, we find that the actual cost of each number of the EXAMINER when ready for the mail is twenty-three cents; or *two dollars and seventy-six cents* for the twelve numbers to which each subscriber is entitled during the year.

This makes it necessary either to reduce the size of the EXAMINER or increase its price. Believing that the great majority of our subscribers would prefer the latter, we shall from this date make the subscription price *three dollars* per annum. All the subscribers who have already paid in advance for 1865 will receive their numbers to the end of the year without additional charge. But all new subscribers, and those now on our books, who have not paid for the present year, will be charged *three dollars* per annum from the first of January, 1865. Owing to an accidental circumstance in the printing office, the publication of the EXAMINER for December, 1864, was delayed several weeks. We shall soon regain the lost time, however, and keep the issue at its proper date.

Chicago Medical College (*Medical Department of Lake Forest University*).—The Sixth Annual Commencement for the conferring of degrees, in this institution, took place on the 7th of March, 1865. The lecture-room of the college was closely crowded with an intelligent audience. The exercises were opened by prayer by the Rev. Dr. Kitchell. In the absence of Prof. Johnson, president of the faculty, Prof. N. S. Davis officiated as president, and after some remarks in relation to the history and progress of the College, those members of the Junior Class, who had passed their examinations, were called up and publicly presented with their Certificates of progress, accompanied by an earnest charge to so continue their studies, as not only to master the facts and principles of the medical science, but also to acquire a mental discipline and development capable of using those facts and principles with the highest degree of success. The list of Candidates for Graudation was then called by the Secretary, and the Degree of Doctor of Medicine was conferred, by the Acting President, on twenty-six young men, accompanied by an impressive charge in relative to the nature of their profession, the responsibilities it imposes, and the necessity of unbending virtue and unremitting labor and study, as the only reliable means for professional success. The President also announced that the ad-eundem Degree of M.D., had been conferred on four candidates, and the Honorary Degree on one; making the whole number of graduates *thirty-one*. The Committee on the awarding of Prizes, reported that the prize for the best Inaugural Thesis had been awarded to John C. Pratt; the prize for the second best Inaugural Thesis, to Henry P. Merriman; and the prize for having sustained the best examination for graduation, to Melvin N. Rust.

The Valedictory Address was then delivered by Prof. J. S. Jewell. The Address was highly appropriate for the occasion, and admirably calculated to benefit those to whom it was addressed. The subject was, the necessity of mental discipline, and the study of metaphysics and logic as a means of obtaining it. The names of the graduates are as follows:—

H. C. Barrell,--------U.S.A.
M. Block,----------Illinois.
R. F. Blount, -------Indiana.
J. V. Campbell,------Illinois.
Thomas Cochran, ---- "
Daniel Duckett,------ "
J. F. Fleming,------- "
J. W. Frazey, ------- "
A. Grætinger, ----Wisconsin.
A. B. Hanna,---------Illinois.
Charles Isham, ------ "
G. A. Kuechen,--------Iowa.
J. E. Link, ----------Illinois.
S. McGiffin,----------Ohio.
H. P. Merriman,-----Illinois.
R. C. Moore, -------- "
S. M. Pegram, ------- "
W. H. Pevler, ------- "
J. C. Pratt, -------Michigan.
M. N. Rust,----------Illinois.
W. D. Saxton,----Wisconsin.
W. H. Searles,---- "
J. S. Sherman, ------Illinois.
C. M. Spalding,------ "
J. W. St. John, ---Wisconsin.
J. F. Williams, ------Illinois.

Ad-eundem Degree.

David Cole,----------Iowa.
D. Hinckley, ---------Illinois.
J. E. Thayer,------Wisconsin.
D. B. Wren,----------Ohio.

Honorary Degree.

E. C. DePuy,----------Illinois.

The whole number of matriculants, for the Term just closed, was ninty-seven. It will thus be seen, that the Chicago Medical College is steadily advancing in prosperity and usefulness. The next Summer Reading and Clinical Term commences on the second Monday in March, and continues until the fourth of July. For particular information in relation to any matter connected with the College, application may be made to the Secretary of the Faculty, Prof. E. Andrews, 101 Washington Street, Chicago.

Chicago Medical Society.—At the regular weekly meeting of the Chicago Medical Society, on the evening of March 11th, 1865, Dr. Hildreth, Surgeon to the Desmarres Hospital in this city, for the treatment of soldiers affected with diseases of the eye and ear, presented to the Society a soldier, about 20 years of age, with a striking want of development in his external auditory apparatus. Both external ears were very small and imperfect in their formation, and the external auditory canals or meatus were entirely *absent*, both in the soft parts and

the temporal bone. Yet the individual could hear ordinary conversation without any difficulty. The defect was congenital. During the discussion to which this case gave rise, Dr. HILDRETH mentioned the case of a soldier who had become deaf, from supposed anchylosis of the small bones of the ear, but whose hearing was restored by a severe concussion. And Dr. DAVIS alluded to a case, which had been reported to him about two years since, of congenital deafness; the individual having been educated as a deaf mute; but in which hearing was restored during the progress of an attack of severe *variola*, occurring after the patient had attained the age of 45 years.

The Society spent the remainder of the evening in an interesting and profitable discussion on the nature and treatment of erysipelas.

MORTALITY OF CHICAGO FOR FEBRUARY, 1865.—The following table of mortality is condensed from the Health Officer's report. The month was characterized by a prevalence of dry, pleasant, and only moderately cold weather:—

DISEASES.

Accidents and Injuries,	3	Laryngitis or Croup,	23
Calculus,	1	Marasmus,	1
Cancer of Stomach,	3	Old Age,	7
Consumption,	33	Ovarian Tumor,	1
Convulsions,	32	Puerpural Fever,	11
Diarrhœa,	8	Rubeola (Measles),	2
Diphtheria,	4	Rheumatism,	3
Disease of the Heart,	3	Scarlet Fever,	8
Disease of the Liver,	1	Scrofula,	1
Dropsy,	8	Small-Pox,	17
Erysipelas,	2	Spinal Meningitis,	3
Gangrene,	1	Stillborn,	18
Inflammation of Brain,	9	Suicide,	4
Inflammation of Broncha,	3	Typhoid Fever,	9
Inflammation of Kidneys,	1	Unknown,	8
Inflammation of Liver,	1		
Inflammation of Lungs,	21	Total,	256
Inflammation of Stomach & Bowels	6		

NATIVITIES.

Atlantic Ocean,	1	England,	5	Poland,	1
Chicago,	133	Ireland,	29	Colored,	6
Illinois,	3	Scotland,	1	Unknown,	6
Other States,	31	France,	1		
Canada,	2	Germany,	30	Total,	256
Denmark,	1	Norway,	8		

Ages of the Deceased.—Under 5 years, 107; over 5 and under 10 years, 10; over 10 and under 20, 14; over 20 and under 30, 27; over 30 and under 40, 31; over 40 and under 50, 16; over 50 and under 60, 12; over 60 and under 70, 9; over 70 and under 80, 5; over 80 and under 90, 2; stillborn, 18; unknown, 5. Total, 256.

New Hospital for Women and Children.—We copy the following from one of our daily papers. Of the mental and professional qualifications of Miss Dr. Thompson, we have no personal knowledge; but the boards of consulting physicians, surgeons, and accoucheurs, are composed of reliable and intelligent members of the profession. We hope the institution will be successfully established:—

The Hospital for Women and Children.—The hospital for the relief and medical care of poor but respectable women and children has been organized by the election of the necessary officers and a board of trustees. A constitution and by-laws for the proper government of the institution have also been adopted, and the hospital may now be looked on as a fixed fact. The fee for the admission of members has been fixed at five dollars, while the payment of twenty-five dollars entitles a person to be elected a life member of the association. The board of trustees is to consist of forty members, a majority of whom must be ladies. It is also provided that the annual meeting of the association will be held on the last Monday of February in each year. The following are the officers of the society for the current year:

President—Mr. J. Y. Scammon.

Vice-Presidents—Messrs. J. V. Farwell, and G. S. Bowen.

Treasurer—E. I. Tinkham.

Resident Physician—Miss Mary H. Thompson.

Consulting Physicians—Drs. W. G. Dyas, C. G. Smith, and S. C. Blake.

Consulting Surgeons—Drs. A. Fisher, J. Bartlett, and T. D. Fitch.

Consulting Accouchers—Drs. Thomas Bevan, H. W. Jones, and E. Marguerat.

Eye and Ear Surgeon—Dr. E. L. Holmes.

Finance Committee—J. V. Farwell, G. S. Bowen, E. I. Tinkham, C. T. Morse, and F. B. Gardner.

Executive Committee—Mrs. W. G. Dyas, Mrs. Colby, Mrs. George Hall, Mrs. W. D. Blain, William Doggett, and T. M. Avery.

Trustees—Mr. J. Y. Scammon, Mr. J. V. Farwell, Mr. J. S.

Bowen, Mr. E. I. Tinkham, Rev. Dr. Collyer, Rev. Dr. Tiffany, Mr. W. E. Doggett, Mr. C. Morse, Mr. F. B. Gardner, Mr. T. M. Avery, Mrs. D. P. Livermore, Mrs. H. Sayrs, Mrs. W. Wheeler, Mrs. Dr. Ryder, Mrs. Dr. Tiffany, Mrs. George Hall, Mrs. D. F. Kimble, Mrs. W. Carpenter, Mrs. Dr. S. C. Blake, Mrs. A. Moody, Mrs. Sandford, Mrs. Degenhardt, Mrs. E. A. Kent, Mrs. J. Medill, Mrs. M. C. Scott, Mrs. W. D. Blain, Mrs. W. G. Dyas, Mrs. A. E. Canfield, Miss M. H. Thompson.

Personal.—H. A. Johnson, A.M., M.D., Prof. of General Pathology and Public Hygiene, in the Chicago Medical College, left home on the fifth of March, on a trip to Europe, where he will probably remain for six or eight months. We cordially wish him a prosperous and pleasant season of travel, and a rapid improvement of health.

Hospital Appointment.—J. S. Jewell, M.D., Prof. of Anatomy, in the Chicago Medical College, has been appointed one of the Attending Physicians of the Mercy Hospital. This is an excellent appointment in every respect.

Illinois State Medical Society.—The following is the list of Committees expected to report at the Annual Meeting of the State Medical Society, to be held in Bloomington, on the first Tuesday in May, 1865:—

Committee on Practical Medicine and Epidemics: J. Adams Allen, M.D., of Chicago; C. Goodbrake, M.D., of Clinton; H. Noble, M.D., of Hayworth.

Committee on Surgery: D. W. Young, M.D., of Aurora; A. L. McArthur, M.D., of Joliet; L. T. Hewins, M.D., of Oak Alla.

Committee on Obstetrics: W. H. Byford, M.D., of Chicago; Lucius Clark, M.D., of Rockford; S. T. Trowbridge, M.D., of Decatur.

Committee on Drugs and Medicines: John Bartlett, M.D., of Chicago; F. R. Payne, M.D., of Marshall; T. D. Fitch, M.D., of Chicago.

Committee on Ophthalmology: E. L. Holmes, M.D., of Chicago; R. E. McVey, M.D., of Waverly; J. S. Whitmire, M.D., of Metamora; F. B. Haller, M.D., of Vandalia.

Committee on Spotted Fever: J. S. Jewell, M.D., of Chicago.

Committee on Orthopœdic Surgery: David Prince, M.D., of Jacksonville.

The Committee of Arrangements and the Profession in Bloomington are preparing to give the Society a cordial reception, and we trust the coming meeting will be larger and more profitable than any that have preceded it. We hope the committees will have their reports fully prepared.

American Medical Association.—The American Medical Association will hold its Sixteenth Annual Meeting in the City of Boston, on Tuesday, June 6th, 1865.

The following Committees are expected to report:—

On Insanity—Dr. H. R. Storer, Mass., Chairman.

On Exsection and its connection with Conservative Surgery—Dr. Lewis A. Sayres, N. Y., Chairman.

On Drainage and Sewerage of Large Cities, and their Influence on Public Health—Dr. W. J. C. Duhamel, D. C., Chairman.

On Alcohol and its Relations to Man—Dr. G. E. Morgan, Maryland, Chairman.

On Quarantine—Dr. Wilson Jewell, Penn., Chairman.

On Medical Ethics—Dr. John A. Murphy, Ohio, Chairman.

On the Microscope—Dr. James M. Corse, Penn., Chairman.

On the Relations which Electricity sustains to the Causes of Disease—Dr. Squire Littell, Penn., Chairman.

On the Morbid and Therapeutic Effects of Mental and Moral Influences—Dr. A. B. Palmer, Mich., Chairman.

On the Causes of the Extinction of the Aboriginal Races of America—Dr. Geo. V. Suckley, Md., Chairman.

On the Causes and Treatment of Ununited Fractures—Dr. Frank H. Hamilton, N. Y., Chairman.

On Diphtheria—Dr. Lucius Clark, Ill., Chairman.

On the Uses and Abuses of Pessaries—Dr. James P. White, N. Y., Chairman.

On International Medical Ethics—Dr. J. Baxter Upham, Mass., Chairman.

On Climatology and Epidemic Diseases—Dr. C. W. Parsons, R. I., Chairman.

On Autopsies in Relation to Medical Jurisprudence—Dr. T. C. Finnell, N. Y., Chairman.

On so-called Spotted Fever—Dr. James J. Levick, Penn., Chairman.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Dr. A. Nelson Bell, N. Y., Chairman.

On Patent Rights and Medical Men—Dr. David Prince, Ill., Chairman.

On Revision of Plan of Organization—Dr. N. S. Davis, Ill., Chairman.

On Specialists—Dr. J. Homberger, N. Y., Chairman.

On Compulsory Vaccination—Dr. A. N. Bell, N. Y., Chairman.

On Rank of Medical Corps in the Army—Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy—Dr. T. L. Smith, N. Y., Chairman.

WM. B. ATKINSON, *Permanent Secretary.*

Destruction of Tumors by Electricity.—Mr. Nelaton communicates a paper on the destruction of tumors by an electrolytic method, applicable to cases in which the tumor is deeply seated, and inaccessible to ordinary instruments. The case quoted by him was a naso pharyngian polypus, which was electro-chemically destroyed by inserting two platnam pins into its mass, and making them communicate with the poles of a Bunsen's pill, consisting of nine elements, sixteen centimeters in height by eight in diameter, and arranged for tension. The tumor was destroyed in six sittings, without any effusion of blood, and with very little pain.—*Correspondent of Med. and Surg. Rep.*

Army Medical Intelligence—*Promotions.*—Among the promotions in the Medical Department sent to the Senate by the President are the following:—Medical Inspector-General, Joseph K. Barnes, to be Surgeon-General, with the rank of Brigadier-General, August 22d, 1864, *vice* Hammond, dismissed. Surgeon Madison Mills, to be Medical Inspector-General, with the rank of Colonel, December 1, 1864, *vice* Barnes, appointed Surgeon-General.

Effect of Petroleum on the Nervous System.—Dr. Georges has observed that the emanations of petroleum have a weakening effect on the muscular system, and cause headache, especially in the case of nervous people, and those who live in a confined atmosphere exposed to these emanations. He states that the latter contain a peculiar principle which may be eliminated, and is found to act principally on the heart and brain. Ether of petroleum may, he adds, be used to cool the teguments during surgical operations, because it causes no pain on the bleeding parts.—*Cor. Med. and Surg. Rep.*

Renal Calculi.—Dr. Owen Rees, in the last number of Guy's

Hospital Reports, gives some clinical remarks on calculus diseases. Dr. Rees comments on the common belief that the presence of a calculus in the kidney is always attended with obvious hæmatura; and he cites cases to show that in cases where all the other symptoms of renal calculus are present, there may yet be no blood in the urine. He believes that, in consequence on an undue importance being attached to the absence of this sign, causes of renal calculus have sometimes been treated as if the symptoms were those of gouty or hepatic derangement. Again, Dr. Rees observes, that frequent micturation, though often observed in cases of renal calculus, is not always to be expected. One gentleman of my acquaintance, he says, almost suddenly was seized in the street by violent pain in the side and retraction of the testicles; and on hurrying home passed bloody urine and a calculus, which latter must have been in the kidney many months without producing any other symptom than an uneasy sensation about the loins.

The pain in cases of renal calculus has been said to be more severe on one side than on the other, even when it exists on both sides. But Dr. Rees says, that he has frequently met with cases where the passage of renal calculi has been preceded by all the ordinary symptoms, except pain in the lumbar regions, the discomfort being altogether referred to the sacrum. He also points out a peculiarity which attends the presence of a calculus in the right kidney. The pain, he says, in these cases is referred to the right hypochondrium. It extends downwards towards the umbilicus, but not to the lumbar region. There is a feeling of great distension over the colon, and the bowels are constipated. These are the symptoms so often regarded as significant of biliary calculus, an error easily committed if blood be not perceived in the urine.—*British Medical Journal.*

Existence in the Human Subject of Organs unprovided with Nerves, Lymphatics, or Capillaries.—Prof. Simpson, of Edinburgh, in an article in a recent number of the *Medical Times and Gazette* (October 29, 1864,) gives an account of some investigations relative to the structure of the umbilical cord and placenta.

The following are his general conclusions:—

1. The volume of the umbilical cord and fœtal portion of the placenta is formed of nucleated cellular tissue, traversed by the tubes of the umbilical arteries and vein and their numerous placental subdivisions; and the cord and fœtal surface of the placenta are covered by a sheath of serous or seroid membrane.

2. Into the composition of these parts no capillaries, vasa vasorum, lymphatics, nor nerves are found to enter.

3. Hence, in human anatomy, we have these organs, forming a large mass, weighing on an average about two pounds, presenting a type of structure resembling that of some of the inferior zoophites. And,

4. The human mother and her child, two of the most highly-organized beings in existence, are thus temporarily united together, during the intra-uterine life of the latter, by structures of the lowest zoological type.—*Paris Cor. of Lancet.*

Deformities of the Feet and the Treatment by Means of Plaster Paris.—Dr. D. C. Enos, in an article read before the Medical Society of the County of Kings, New York, gives the following mode, &c.: Take a straight piece of muslin, wide enough to embrace the head of the tibia, and long enough to extend from the head of the tibia around the heel, and as far as the great toe; then *tear* five or six other pieces of the same size; next stir some plaster of Paris in warm water, till about the consistency of cream; place upon a board, or table, one of the pieces of muslin, and put on it a teaspoonful or two of the plaster, and, with a long knife, spread it evenly over the cloth, so that it shall *be wet and thinly covered;* place upon this another piece of muslin smoothly, and with more of the plaster spread in like manner, and so continue to spread layer after layer until the last, which should *not* be spread; or if so, should be covered with a thin layer of cotton, to come next to the limb. Place the bandage behind the leg, and first bend it around the head of the tibia, and let an assistant hold this firmly, while you next apply it to the sole of the foot as far as the great toe; if it should be too long, turn it back on itself so as to leave the toes exposed; next bend it around so as to neatly embrace the foot to the instep. There is now a redundance of cloth at the angle of the foot, which may be disposed of by folding it on itself so as to smoothly apply the remainder to the ankle and leg; over this a roller should be applied from the toes to the knee, and back again, so that the dry cloth may absorb the moisture from the plaster, and thus facilitate its setting. As soon as the roller is applied, grasp the foot and ankle firmly and forcibly, press the foot towards its normal position, holding it steadily 10 or 15 minutes, till setting has made it firm. Sometimes he embraces the foot and ankle; first, by taking a piece of muslin, from one or two yards long, and from six to eight inches wide, spread it thinly with the plaster, double it longitudinarily and

spread it again, and double it once more, and apply it to the foot and ankle, somewhat like an ordinary roller, holding the foot as before till the plaster sets. This answers for deformities of the foot, simply, where its position with the tibia is normal; but if it is abnormal, as it usually is, the retentive apparatus must extend to the knee, after embracing the foot, as already fixed. Sometimes this can be advantageously done by putting a number of folds of the plastered muslin along on the top of the foot and anterior part of the leg, strengthening it in the instep by an extra quantity of plastered cloth, binding this on with a roller, and holding the foot firmly up till the plaster sets. Occasionally, to strengthen the first described application, he applied over it this plaster and four folded roller around the foot and ankle, thus making a figure of eight bandage. After the apparatus had been on for three or four days, it can be removed, and a new one applied, when, from the absorption that has taken place, an increased amount of pressure can be borne, and the foot made to approach still more towards its normal position.—*Buffalo Medical and Surgical Journal.*

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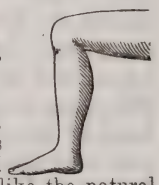

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NEW YORK, FEBRUARY 10, 1860.

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VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

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ARTICLE VII.

TREATMENT OF UTERINE TUMORS.

By WM. H. BYFORD, A.M., M.D., Prof. of Obstet., &c., Chic. Med. Col.

The surgical treatment of uterine tumors is always difficult, sometimes dangerous, and often fruitless in its results. The inacessible position of them, their proximity to important organs, and the want of proper knowledge of them, may account for these facts. Anything, therefore, that gives reasonable hopes of simplifying their cure, should commend itself to the attention of the profession. Of the modes now used, two seem to occupy the attention of the profession almost exclusively. One mode is to cut and extract them wholly from their bed in the tissue, and the other is to partially remove or destroy them, and depend upon disorganizing inflammation to finish the process of removal. A simpler method is to excite inflammation in them and depend upon it for their disintegration and elimination. This idea has been acted upon, and one case is reported by Prof. Simpson as being successful. It will be recollected that he punctured the investment of the tumor and slightly penetrated it with caustic potassa, which caused inflammation, sloughing, and evacuation of its substance. There is naturally a feeling of repugnance and fear in most minds against the use of this potent remedy for such purposes. I think an efficient

and comparatively mild substitute for it, and one that gives less pain in its use, and which is not likely to spread inflammation to other tissues, and yet which excites this process where it is most needed, is found in the introduction of a foreign substance into the middle of the growth, and allow it there to remain until it excites disorganizing inflammation.

The mode of doing this is to insert a trochar into the substance of the tumor to its centre, when practicable, withdraw the stillette, pass the substance to be used through the tube, and hold it by means of a probe at the bottom of the perforation while the canula is withdrawn. In the course of a few days, inflammation will commence; disorganization, and after awhile, disintegration by suppuration and sloughing will cause the discharge of the substance of the growth.

The substance I have used is cotton wool; and I have in the two instances in which I have used it, previously to passing it through the canula, made fast to it a stout thread, so that it might be withdrawn if need be; but in neither case was it removed until washed away by the discharges. The tumor should be perforated through the vaginal or uterine canal, instead of through the abdominal wall.

Case I. Was a Mrs. G., aged 38 years, barren. She had been married twelve years. During the last four or five years she had been subject to more than the ordinary amount of sanguineous discharges. I was called to see her August 30th, 1863, when she informed me she had a polypus; that it had been removed once by a string and double canula, but in less than two months from the time of its removal it had, to all appearance, grown to be as large as it was before its removal. On making an examination, I found a tumor filling up a large distended uterus and implanted on its fundus, with no appearance of neck. It was nearly as large as a goose egg. After a few days, I removed as much as I could, which must have been two-thirds of it, with the ecrasseur. By the 1st of November, it seemed to have attained its former size. An examination of the portion removed showed it to be a specimen of the fibrous variety of polypi. On the 1st November, I plunged a trochar

into the centre of it, to the distance of one and a-half inches, and withdrew the stillette, leaving the canula in the tumor. I next secured a piece of cotton wool, by tightly tying a stout thread to it, oiled it, and passed it down to the bottom of the canula, and holding it firmly in position by a strong probe, left it in as I withdrew the canula over it. The cotton remained in its place for ten days or two weeks, when it came away with the fetid discharge that had before commenced. I felt tempted to reintroduce it, but the whole polypus was so flabby, and in a state of such decomposition, that I did not do it. In three months from the introduction of the cotton, the tumor had entirely disappeared, and my patient remains well. She has some leuchorrhea and tolerably profuse menstruation. The only local treatment used was soapsuds injections several times a-day, as a matter of cleanliness. During the first six weeks after the operation, the patient was troubled with considerable diarrhœa, pain, and slight fever, but was not seriously ill.

CASE II. Was that of Miss E., aged 29 years. She had been subject to severe hemorrhages at menstrual periods, and for two years they had become alarmingly copious, and she had been debilitated, despondent, and nervous. She was very anxious to be relieved, as she desired to marry. An examination revealed an intramural fibrous tumor, occupying the anterior portion of the uterus, apparently about the size of a hen's egg. It extended very low, so as to encroach upon the vaginal portion of the cervix anteriorly. I thought it a good opportunity to try the cotton plug, and, accordingly, used it in the following manner. After introducing a catheter into the bladder and drawing off the urine, and a probe into the cavity of the uterus, to be sure of the direction with reference to the bulk of the tumor, I passed a rather small trochar into the middle of the tumor from the vagina upwards, and through the canula a piece of cotton secured by a thread, and left it *in situ*, and directed the patient to remain quiet until I saw her again.

In about four hours, I was requested to see her, as there was slight hemorrhage, and she was very much alarmed about it. The patient was so much alarmed that I determined, with a

view to insure inflammation in the tumor, to pass some more cotton in the track of the canula. This I did through a speculum, with a stout probe, until it seemed pretty well filled up. Nothing further occurred, worthy of note, until about the fourth day. The patient then became feverish, and complained of pain, tenderness, and heat in the vagina. The parts were dry and hot; the pulse was about 100; the tongue white and dry, and there was some thirst. This moderate febrile reaction kept up for ten days, or two weeks, with varying degrees of intensity. During this time, about the sixth day, a sero-purulent discharge from the vagina began. It became more copious, and grew offensive; and on the tenth day, some of the cotton passed. This offensive discharge and feverish indisposition continued for about four weeks, and then slowly subsided. During this time, the treatment consisted of vaginal injections three times daily, quinine and sul. acid. There was so little inconvenience experienced in this case, that it seems hardly necessary to give a more circumstantial relation.

Other substances besides cotton may be used to excite inflammation in the tumor, and if sufficient destructive efforts do not follow the first introduction, a second might be attempted; and if still more irritation be desirable, the cotton might be dipped in tincture of cantharides, or other irritating fluid; or, following Dr. SIMPSON, a little caustic potassa passed through the canula and left in the tumor.

These cases and remarks are published with the view of encouraging a trial of some method similar to this, for the removal of tumors that cannot be taken out by the more summary process of excision. I think the treatment equally applicable to tumors elsewhere located, and of different composition; to any encysted tumor in which it is desirable to awaken disorganizing inflammation, and which is located in a place not accessible to the knife.

ARTICLE VIII.

THE RECENT INVESTIGATIONS OF RICORD AND OTHERS UPON THE SUBJECT OF SYPHILIS.

BY E. ANDREWS, M.D., Prof. of Surg. in Chic. Med. Col.

One of the most positive achievments in surgical pathology, consists in the rediscovery of the double nature of syphilitic poison.

It is satisfactorily proven by the investigation of RICORD and others, that the disease variously called soft chancre, chancroid, chancrelle, non-infecting chancre, &c., never contaminates the constitution, and is essentially different from the true infecting chancre of syphilis. The reasons of this conclusion I will briefly recapitulate.

First—as to the history of these diseases. It is a fact demonstrable, that while the non-infecting chancre, or chancroid, has been known from all antiquity, and is described and referred to by Hippocrates, Celsus, and others, there is nowhere a record or a trace of genuine syphilis previous to the time of its outbreak in Europe, just before the year 1500. For instance, the ancient writers rank the occurrence of painful suppurating buboes among the prominent symptoms of the venereal disease known to them, while in genuine syphilis, buboes are seldom prominent enough to attract much attention, and very rarely suppurate. The inflammatory suppurating bubo is a characteristic mark of the chancroid only. I have discovered in ancient history a curious little passage, which I have not seen referred to by any author, and which shows that troublesome inflammatory buboes were well known to the Egyptians, and supposed by them to date back beyond the days when the Israelites left that country under the lead of Moses.

The historian Josephus wrote two controversial treatises defending the Jews against the slanders of Apion, an Egyptian author. In the Second Book, he indignantly quotes Apion as giving the following account of the origin of the Jewish Sab-

bath, viz.: that after the Israelites left Egypt, they travelled six days towards Palestine, when they were attacked with buboes in their groins, on account of which they were compelled to stop and rest on the seventh day, being unable to march. Therefore, as the Egyptian name of a bubo was *Sabbo*, they called it the *Sabbath-day*, that is, *Bubo-day*. Josephus combats this etymology by saying that it is true that *Sabbo* in Egyptian signifies bubo, but that *Sabbath* is a Hebrew word, and means not *bubo*, but *rest*.

Hippocrates and Celsus were well acquainted with chancroids and suppurating buboes, but give no account of genuine syphilis. The writings of Solomon have been supposed to prove the existence of constitutional syphilis, because they plainly refer to some disease as causing the death of such men as resort to the houses of strange women. Solomon gives no description of this disease, but the tone of his language conveys the impression of some quick and rapid attack which brought the offender promptly to his grave. This corresponds to the sloughing form of chancroid which is especially prevalent in hot climates, and which often destroys life in a few days. I have seen two fatal cases of the same sort in this city. Genuine syphilis, on the contrary, is slow in developing, and wastes away the patient through years of suffering.

All ancient descriptions and referenees, therefore, to venereal sores, seem to point to the chancroid only. This continued to be the case down to the year 1494, when about the time of the famous siege of Naples by the French, genuine syphilis made its appearance. It is a matter of history that the physicians of that day never confounded these two diseases together, but distinctly recognised their separate character. In their books the two are found treated of in separate chapters, the old disease, or chancroid, with which they had long been familiar, being clearly described, and often called Caries, *non Gallica*, to distinguish it from the genuine *Gallica* or French disease. They attribute no constitutional to the former, but give full prominence to the evidences of general infection of the system by the latter.

The fact that the medical world at that time, though long familiar with chancroid, never confounded the new disease with the old, is powerful evidence of the aspect presented by these two diseases to unprejudiced minds. But as the old generation of physicians died out, who had seen chancroid for years in an unmixed form, their successors gradually became confused by the constant occurrence of the two diseases together. Hence it happened that soon after 1520, the chancroid and true syphilis began to be looked upon as the product of the same virus, and continued to be thus described down to our own day.*

Diagnosis of these Diseases.—Much confusion exists in the minds of the profession on this subject, and some of our most eminent authors commit egregious blunders in their remarks upon it.

Chancroid, sometimes called soft chancre, has no distinct period of incubation, but commences at once to produce its effects, and in forty-eight or seventy-two hours is usually large enough to show its character. It consists, in its normal form, of a rounded ulcer with a flat base, which is sunk into the mucous membrane with distinct edges, as though a piece of membrane had been cut out with a rough punch. The floor of the ulcer is not red, but is covered with a whitish diphtheritic exudation, and bathed in pus. The tissues beneath the ulcer preserve all their normal softness, which is a very important point of distinction between this and true syphilis, or hard chancre. It is proper to remark, however, that the base of a chancroid may be made to assume a fictitious hardness by irritating applications, such as nit. of silver, &c. The chancroid has but little tendency to spontaneous healing, and if not treated, will often continue a year or more in the same patient. The pus of this ulcer is capable of reproducing similar ulcers to an indefinite extent by inoculation, either in the same, or in other patients. These inoculations have been practised to ah enormous extent, and the results of careful and extensive experiments show that the pure chancroid never produces the symptoms of secondary syphilis. The buboes which follow chancroid commonly involve

* See Bumstead on Venereal Diseases.

only one or two glands, and are very prone to inflame or suppurate, showing in that respect the same aplastic and suppurative character as the chancroid from which they sprang. Finally, the chancroid in aplastic constitutions is liable to assume a plagedenic, or even a gangrenous form, and sometimes causes the death of the patient within a few days, with symptoms of prostration and pyæmia.

On the other hand, genuine syphilis, in its pure form, presents the following symptoms: First, there is a period of incubation, which is seldom less than eight or ten days. The chancre, when formed, is smaller in size, and much less formidable in appearance, than the chancroid. The base is but little excavated, the floor is of a natural rosy color, without any diphtheritic exudation, and does not produce a particle of pus, unless the surface has been subjected to some irritating influence. The base and circumference of the ulcer are infiltrated with plastic lymph, so as to give a sensation of hardness to the touch. Sometimes, however, the induration merely exists in a very thin stratum, like parchment, under the ulcer, which can be felt by pinching it edgewise between the thumb and finger. In cases where the patient has been the subject of true syphilis previously, this symptom is often modified to such an extent that no induration whatever can be perceived, the chancre having the appearance of a mere abrasion of the mucous membrane. True chancre often heals spontaneously in a short time, leaving only the secondary symptoms to mark the progress of the disease. Its secretions when inoculated into the same patient are utterly inert, but will reproduce a true chancre on any other person who has not had the disease. Of those who have once had syphilis, only a small proportion—probably about one-fourth—are capable of having it a second time. The inoculated virus of a pure chancre never produces chancroid, nor does the virus of pure chancroid ever result in chancre. The buboes of chancre are usually numerous, show but little tenderness or inflammation, and very rarely suppurate. They manifest the same indisposition to produce pus which exists in the chancre from which they sprung. Finally, chancre seldom or never as-

sumes the phagedenic form; but in probably every instance it more or less infects the constitution, and, unless treated, its usual course is to produce, one after another, the symptoms classed as secondary and tertiary syphilis. It has been proved that blood, and also other fluids drawn from a patient laboring under the so-called secondary syphilis, even at a distance from the chancre, is capable of producing syphilis by incubation; a point of extreme importance as bearing on the proper selection of wet nurses and vaccine scabs. It also suggests caution to surgeons operating on contaminated patients.

Placing these two sets of symptoms in parallel columns, we see the ground of diagnosis very clearly:—

CHANCROID.	SYPHILIS.
Has no period of incubation.	Has a period of incubation.
Is frequently multiple.	Chancre seldom multiple.
Color whitish yellow.	Color rosy.
Not indurated at base.	Indurated at base.
Produces pus abundantly.	Produces scarcely any pus.
Produces large single suppurating bubo.	Produces several small non-suppurating buboes.
Never contaminates the system.	Always affects the system.
Can be inoculated successfully into the same patient.	Cannot be inoculated successfully into the same patient.
May occur any number of times in the same person.	Generally can occur only once in the same person.

Mixed Chancre.—Chancroid is the most common, by far, of these diseases; while a pure syphilis, unmixed with chancre, is, in Chicago at least, quite rare. Next after the pure chancroids, the most common form is a mixture or complication of the two diseases, called "Mixed Chancre." This is the genuine old "Hunterian Chancre" of the authors. It manifests the characteristics of both diseases. The ulcer has the purulent effusion and diphtheritic surface of chancroid, with the hardened base of true syphilis. It is slow of healing, like the former, and infects the constitution, like the latter.

Practical Conclusions.—The most obvious inference from these facts is, that insomuch as a pure chancroid does not affect the constitution, it does not require constitutional treatment. If its purity is undoubted, it is all-sufficient to treat a chancroid by from two to four cauterizations with fuming nitric acid, nitrate of mercury, or sulphuric acid. It will then commonly heal without difficulty.

Practically, however, the case is not thus simple. What appears during the first few days to be a chancroid, may be really a mixed disease, in which the induration has not yet been developed, because the time of incubation of the syphilitic part of the symptoms has not fully elapsed. Again, in a person who has had syphilis before, if he proves able to take it a second time, the induration may be entirely absent. For these reasons we are rarely able to say that a chancroid is not mixed with syphilis, whatever may be its present appearance, unless it has been in existence a long time. Disastrous results in the spread of syphilis have occurred in families in this city, in consequence of surgeons relying on the softness of a chancre, and deciding, therefore, that there was no danger of constitutional infection. My practice, therefore, is to lean to the safe side, and treat nearly all venereal ulcers as if they contained syphilitic virus, without waiting for a full development of the disease. There is no doubt of the fact that the absorption of the virus into the system is so rapid that, in true syphilis, the constitution has already received the influence before the induration of the chancre is developed. Hence it is in vain to rely on early cautery as a means of preventing secondary symptoms. The cautery, however, is necessary for the destruction of the chancroidal virus and the healing of the ulcer.

A point of great practical importance has been established by experiments upon the inoculability of secondary syphilis. It appears that the blood and other fluids drawn from any part of the body, where there is a syphilitic tubercle or other form of secondary disease, will produce a pure chancre, followed by constitutional disease. Hence vaccination, nursing, surgical operations, dissections, &c., are all capable of transferring the disease from one person to another.

A single word about remedies. It is now pretty generally admitted that, in primary and secondary syphilis, mercurials are far superior to all other medicaments. BUMSTED, however, is of the opinion that in proportion to the increase of time which has elapsed, mercurials become less and less useful, and iodide of potassium more potent. My practice is to gently mercurialize the patient first, and direct iodide of potassium to be taken for six months afterwards, in doses of five grains, four times a-day.

ARTICLE IX.

CASE OF ACUTE GASTRITIS.—SUDDEN DEATH.

BY HIRAM NANCE, M.D., Kewanee, Ill.

I was called on Friday evening, March 3d, at twilight to see Miss Rosanna Wiley, aged 17. Found her sitting up in a chair Pulse about natural; tongue slightly coated; countenance rather depressed; temperament nervo-bilious. She complained of some pain and oppression in the epigastric region, extending to the right hypochondriac region, and, slightly, to the left hypochondriac region. I saw nothing in the case, arousing my suspicions that anything very serious was pending. I diagnosed hæpatic torpor, or slight congestion of the stomach and liver. In fact, I regarded the case as one of our ordinary bilious attacks of this climate, and founded my treatment upon this basis. She had been to school the day previous, and, in fact, had not as yet taken her bed. I made inquiries, and found that her appetite had been failing for some eight or ten days, and she had been complaining for this length of time with slight pain and oppression in the parts previously spoken of. I ordered her three powders, each composed of prot. ch. hyd. grs. v, rhei. rad. pulv. grs. xv, one to be taken every alternate or third night, if she did not seem much improved on the first, and requested some one of the family to call the next day at my office, and get some vegetable bitter in wine, to be repeated morning,

noon, and night. The latter was not called for; but on the next evening (Saturday), about the same time of day, I was again summoned to see her. Dr. J. F. TODD, a former student of mine, but now a practitioner of medicine, residing and doing business at Wyanet, Bureau Co., happened to be at my house. I invited him to accompany me to see the patient, not that I regarded the case a perplexing and difficult one, but through courtesy. We found her in bed, suffering from pain in the stomach; complained of some burning sensation and oppression as formerly; countenance rather pallid, though not more than is usually seen in diarrhœa, or other common bowel affections in their formative stages; pulse some accelerated, amounting to about 100 or 110, rather small and quick; tongue moist, and slightly furred, ordinary color; no elevation of the papilla; very little sickness at the stomach. I conversed with Dr. TODD, and we came to the conclusion, as the bowels had moved but little from the powder I had ordered the night previous, that we continue the same medicine until free evacuations were obtained. I ordered the same that had been left the previous evening (cal. and rhei.), and if it did not move by morning, to give the second dose. We conversed about the case when we left the house, and I gave it as my opinion that gastritis might be the result, founding my opinion upon the oppression about the stomach; some pain in the epigastric region; small pulse; thirst, sickness, and burning sensation, though the latter symptom not very well marked. I omitted to mention that I also left four powders, each containing grs. ij prot. ch. hyd. and ⅛ gr. acetate morphia. Those were to be given every two, three, or four hours after the operation of the physic, if the pain and uneasiness continued. I had not been at home more than two hours, before a messenger came after me, saying she was suffering much pain. I told him I could do nothing more, as I had just left the house, and, instead of waiting until next morning to give the second dose of medicine to move the bowels, to repeat it in four hours, and, then, if the pain continued, to give the anodyne and alterative powders I had left until she was relieved. I also ordered sinapisms and hop poultices, and to abstain, as much as possible, from drinks.

Next morning (Sunday), called to see her, about 10 A.M. Found her raised up in bed, with a lady supporting her in a sitting position. Pulse from 120 to 130, very weak; face pallid and waxy; lips purplish; tongue moist, slightly furred; great depression; continued nausea, and occasional vomiting; excessive restlessness; extremities cool; surface of body natural; skin but very little moist. Those symptoms alarmed me very much, in fact, I regarded her in a state of semi-collapse, from which I feared she would never react. I immediately ordered her one spoonful of brandy and ¼ gr. of acetate of morphia, sinapisms to be applied to the stomach, bowels, and extremities. I also, immediately, ordered a messenger to go for Dr. TODD, who was only a few block's distant, and in ten minutes time he was with me. I expressed my fears that she would never react. The irritation of the stomach was so great that nothing could be retained. We gave her morphia, sul. æther, Hoff's anodyne, brandy, ice, small doses of calomel, &c., &c., all to no purpose. Withheld drinks, giving only small pieces of ice in lemonade, but nothing proved of any avail. We remained with her until 2 P.M., then left for half an hour. I then called and staid an hour; went away, and returned in two hours. When I returned, I found her still sinking; vomiting had ceased, but the nausea still continuing; pulse a mere flutter.

I requested Dr. SCOTT, of this place, to call in with me and see her. He came in about 8½ P.M. Pulse at one wrist had then ceased, and very faint at the other. Half an hour longer she was pulseless; *intellect perfect.* I informed her she could not live but a very short time. She seemed astonished; said she felt quite easy. She called her friends around her, bid them affectionate farewells, and in half an hour death closed the scene.

I report this case for its peculiarity, for its sudden termination in collapse and death. No *post mortem* was obtained. Now, the question arises, was it a genuine case of gastritis? Dr. TWEEDIE, in his work on Practical Medicine, says, "if the disease (acute gastritis) does not *terminate in death in a few hours*, or by the second or third day, it may extend to two or

three weeks, and still prove mortal; or it may pass into chronic gastritis of indefinite duration." He further says, "death in rapid cases is produced by depression of the vital functions." Acute gastritis is usually produced from poisons, concentrated acids, or cold drinks when the person is over heated. None of these could I attribute this attack to. She had been complaining, as I observed, several days with oppression, &c., of the stomach, before the urgent symptoms made their appearance. She apparently, and not only apparently, but did actually die from the *shock* the nervous system received before reaction took place.

The great solar plexus of nerves composed of ganglions and filaments intervening and anastimosing with each other from the great sympathetic, also branches from the pneumo-gastric or eighth pair, is minutely distributed upon this great plexus. This great solar plexus of nerves is situated in the spinal column posterior to the stomach, liver, and spleen, and gives off inferior plexus to the diaphragm, liver, and stomach, also the superior and inferior mesentric. The kidneys are likewise supplied with nerves from this plexus. Thus we see this nervous plexus is of great magnitude, and if it should receive a severe shock from any source, either idiopathic or from injury externally applied, death might speedily result. Now, my opinion is, that the great lesion was about this great plexus of nerves. That there was some congestion of the liver, spleen, and stomach, I do not doubt; but I should doubt extremely if inflammatory symptoms had as yet set up in the stomach when death took place, notwithstanding TWEEDIE says death may take place in a few hours. You will observe there was not a flushed countenance, neither was there a red tongue, nor any great degree of burning in the epigastrum. If in acute gastritis we must have those symptoms, then inflammatory symptoms had not set up, and she died from the collapse of the nervous symptoms produced by inflammation of the stomach. Had she reacted, in my opinion, active well-marked gastritis would have been the result.

In conclusion, I might say, that my treatment was not such

as is ordinarily pursued in cases of acute gastritis, neither do I think any *sane* physician would have adopted such treatment under such circumstances. Who wouldn't give brandy and other stimulants to a patient in a dying condition? And where would you find a physician fool enough in our profession to bleed, cup, leech, and use other antiphlogistics when the last lingering spark was fast fading away?

I omitted to say in the proper place, that I diligently enquired if my patient had either ate or drank any unusual diet recently, and found that on Thursday she had been eating oysters with the rest of the family. Had others of the family been ill, I might have attributed the exciting cause to the oysters, but they all remained well.

CEREBRO-SPINAL MENINGITIS.

By F. R. PAYNE, M.D., Marshall, Illinois.

This epidemic, usually called "spotted fever," has for the last five months prevailed to an alarming extent in this community. It is a terrible disease, and in my opinion, based upon limited observation, if treatment is delayed for twelve hours, death is inevitable.

The disease is ushered in by a chill, or rather tremor, surface of the body cold, pulse, if at all perceptible at the wrist, small and slow, the skin an ash or light lead-color, pain in the head, back, or some of the extremities, a tremulous and painful sensation in the epigastrium. In a short time the eyes become suffused, pupils dilate; the patient becomes restless, and very sensitive.

There is all the evidence of congestion and depression, clearly indicating some toxic agent in the blood, which seems to have a strong affinity for the brain and spinal marrow. The blood is rapidly disorganized—its vitality destroyed—the capillaries and vessels of the brain lose their contractility, as shown by deep moaning, petechical eruptions over the surface of the

body. At this stage the patient is partially delirious, but in most cases they will answer questions correctly. The bowels, in nearly all cases, are constipated, tongue slightly coated, and in most of them we find contraction of the posterior muscles of the neck.

Death frequently takes place in five or six hours after the first symptoms appear. I agree with Dr. McCoy, of Morgan County, Illinois; his observation corresponds with what is presented in this locality. The circulation gives out first, then the intellect, and lastly, respiration. Without prompt and energetic treatment, the eyes are frequently closed in death before reaction. In a few hours after the chill, the congestion and depression will completely exhaust the vital powers of the system, and remedial agents will accomplish nothing, even if reaction is established.

In Clark County, we have on former occasions been visited with epidemics in many respects similar to the one now raging. In 1845–46, Dr. James Smick and I met with a terrible and fatal epidemic, vulgarly called "*black tongue*," but, as shown by *post mortem* examinations, was cerebro-spinal arachnitis. This disease first made its appearance in the cuticle, and in all respects resembled ordinary erysipelas, but soon extended through the mucous membranes to internal parts, and then we had symptoms almost precisely the same as now found in *spotted fever*—congestion, depression, and partial delirium. We then, on account of the epidemic prevailing in wet or damp weather, favorable for intermittents, supposed that the toxic agent was *malaria*. We are now thoroughly convinced that the blood-poison is not the same as that which produces intermittent and remittent fevers. In 1845–46, *post mortem* examinations revealed congestion of the bloodvessels of the brain and spinal marrow, and, in the language of Dr. Smick, "the arachnoid was inflamed in every part of it, and covered with a thick layer of pus;" but still we had great depression, contra-indicating the resort to antiphlogistic remedies. It is evident that malaria is not the origin of this class of diseases, from the fact that we have it in districts almost entirely exempt from the prevalence

of malaria, and its absence in localities where the generator of intermittents is known to exist. I learn from Dr. J. D. MITCHELL, who located in Darwin, Clark County, after SMICK and PAYNE left that place, that in 1858, a similar and very fatal epidemic prevailed to an alarming extent in that locality, which he denominated *erysipelas of the brain.* In all of these cases the symptoms were nearly the same as now in spotted fever. They had no premonitory external symptoms, as in 1845, of the approach of a terrible disease. The malady was ushered in with a chill, or rigor, great depression, and congestion of the brain and spinal marrow. This epidemic prevailed in that locality only, and all the cases were in the vicinity of Darwin, on the Wabash River; no cases above or below that point. In this county we had no visitation of an epidemic of this character until the winter and spring of 1863–64; but we learn from Drs. S. JUMPER and CHARLES GORHAM, that what is now called *spotted fever* then prevailed to a fearful extent in the localities of Darwin and York, in the south part of Clark and north portion of Crawford County.

In November, 1864, we were, in this locality, visited with the terriffic disease called "*spotted fever*, and from that time until present writing an element has existed in the atmosphere, or somewhere else, which has caused an extraordinary amount of eruptive fevers. In ordinary cases of pneumonia, we usually have petechia or wine-colored spots, frequently all over the body; and in March, 1865, many unmistakable cases of small-pox made their appearance.

It has this winter and spring been clearly demonstrated that, when eruptive diseases prevail in a community as an epidemic, the virulence of small-pox contagion is at least sharpened; but we have no positive evidence of it existing epidemically. We do not believe that the epidemic influences which produce these eruptive fevers are capable of generating small-pox.

Within the last five months I have treated thirty-one cases of what is called spotted fever. Fourteen have died; the others are all well except one, a little child, two years old. It seems tolerably well, but sight and hearing are much impaired. My

treatment after the first cases was based upon the views and observations of Dr. McVEY. When this disease is first ushered in, it is important, and absolutely necessary, that we resort promptly and energetically to the use of arterial or general stimulants. Under their influence the heart and arteries pulsate with more vigor, and the contracted capillaries become distended with red blood, and all the functions, especially those of the nervous system, are rendered more active. For this purpose we use brandy or good whiskey freely. In a disease so rapid in its march and terrific in its nature, it is necessary to use, in addition to these remedies, agents which will act directly on particular organs or apparatus. The capillaries and vessels of the brain are congested, and opium is perhaps the best remedy known to fill the important indication of arousing them to action, that they may rid themselves of the morbid accumulation of fluid in their structure. Quinine is certainly contra-indicated, and in all my recent cases I have used arsenic as an anti-periodic. In the treatment of thirty-one cases fourteen died, and it is unfortunate that I was not able in any of the cases to procure a *post mortem* examination. Drs. R. F. WILLIAMS and RAINS also lost a number of cases.

After the first few cases, our treatment was, in the chill, brandy, mustard to spine, legs, and arms; opium to adult in 3 to 5 grain doses, every three or four hours; hot rocks, and stimulating friction of the surface. If reaction could thus be established, we diminished the brandy and continued opium, to which was added alterative doses of hydrargyri chloridi mite, and moderately keeping the bowels open with mild aperients. Alternately with the opium powders, we give four to six drops of Fowler's Solution.

This treatment is certainly the most successful, and we feel confident that if early adopted, a majority of the cases will recover.

ARTICLE X.

A THESIS ON HOSPITAL GANGRENE.

BY JOHN E. LINK.

Presented to the Faculty of the Chicago Medical College, February, 1865.

Hospital gangrene is characterized by a dark gray, pulpy slough, with inflammation of the surrounding tissues, presenting a circular form, with raised indurated edges, spreading rapidly. There is a discharge of dark, or yellow-greenish pus, with an offensive, pungent odor, and not to be mistaken, if once recognized. The patient complains of loss of appetite, an indisposition to sleep, has sharp, biting, or stinging pain, the pulse is quick and feeble, cheek flushed, tongue dry and furred. Sometimes, in the early stages of the disease, the patient complains of chilly sensations, followed by hot flashes, alternately. This is not so marked in the early as in the latter stages, where it has been permitted to run on for several days, and the patient is becoming exhausted. The disease is wholly local, the constitutional trouble being merely the result of the local, and at once disappears when it is checked. It generally attacks recent wounds, though not confined wholly to them. I have seen it, in a few instances, occur in old, indolent ulcers, and in suppurating wounds, that were closed to the size of a ten cent piece, or smaller. Stumps that are almost healed, are sometimes attacked, and the cicatrix destroyed, laying the flaps entirely open in a few days, if not checked. It confines itself, principally, to the integument and cellular planes, often dissecting the muscles and larger bloodvessels as nicely as if done with the scalpel. It sometimes, however, attacks these and converts them into a pulpy mass which sloughs away, and, in the latter case, causing dangerous hemorrhage. The bone is sometimes denuded and necrosed. In one case that came under my observation, the tendo achilles was divided, but all these, in the majority of cases is more the result of the remedies used than of the disease. The destruction of bone may generally be avoided by proper care. The cellular tissue is more readily affected

and destroyed than the integument, thus causing saculation and burrowing of pus, and for this reason the wound should be thoroughly examined, by the probe or finger, to learn the extent of the disease. It is more liable to attack wounds from the fifth to the tenth day after the receipt of injury than at any subsequent period, or, after healthy granulations have once sprung up.

The causes of hospital gangrene are various. Among the most frequent are crowded or ill-ventilated wards, the effluvia arising from sinks, decaying vegetable or animal matter, or filth of any description. The crowding of too many suppurating wounds into one ward is a very frequent cause, as well as a lack of frequent and proper dressing, or using the same sponge and dresser for different patients. Where one patient is suffering from e disease, the others immediately around him, and even in different parts of the ward, are liable to be attacked, even where the most diligent sanitary rules are complied with, and all care taken to prevent actual contact by using separate dressings and dressers—for this reason, the cases suffering with the disease should be kept isolated from the other patients.

In the treatment of gangrene, the first and most necessary step, is the thorough cleansing of the wound, and as it is a very painful one, it is best to put the patient under the influence of chloroform or ether. The surgeon should arm himself with a pair of forceps, probe, scissors, scalpel, basin, and sponges. With the forceps and scissors, or scalpel (I generally prefer the latter), the surgeon proceeds to trim away the slough, and it is best in all cases to remove the skin as far as the disease has extended in the tissues beneath, to prevent the saculation of pus, giving free drainage, and on the first application, where the disease is first making its appearance, and the tissues are not entirely disorganized, it is best in these cases to make free use of the scalpel, and remove nearly, if not quite, the whole of the surrounding indurated tissue. After this is done, and the wound is thoroughly dried, apply some caustic, either nit. acid, bromine, or solution of chlorite of zinc, to destroy any remaining virus. Where this is done in the early stages of the disease, a second application is scarcely ever required, but where

the disease has existed for a longer period, so that there is a large open sore, the whole face of which presents a dark gray, pulpy appearance, the management of the disease is more difficult, and may require several applications before it will be entirely checked. In all cases the wound should be thoroughly cleansed, by scraping with the handle of the scalpel or spatula, until the whole of the gangrenous slough is removed, and the healthy tissues beneath are reached. As a local application in these cases, I generally make use of the nitric acid. It is much more simple and easily applied, and also more penetrating than the bromine, finding its way to the most intricate interstices, while the bromine will not penetrate its own coagulum, and, owing to its volatility, is much more difficult to handle, and often, in the hands of those unaccustomed to using it, gives rise to very unpleasant circumstances, filling the room with its vapor, which, by no means, has a pleasant effect on the eyes and air-passages of those who come in contact with it; and even in the hands of the most practised, this cannot be wholly avoided.

The mode of applying nitric acid is simple. Tie a small piece of sponge, or a piece of soft cloth, to a small stick, making a swab or mop, which should be thoroughly saturated with the medicine, and applied to all parts of the wound which pours out a dark fluid, which should be removed with the sponge, and the application continued until the surrounding tissues lose their red, inflamed appearance, and become pale and soft, which will always be the case, if continued long enough, and if carried to this extent, it will very seldom be found necessary to repeat the treatment. The wound should now be dressed with simple water dressing—some prefer the charcoal and yeast poultice, which seems often to have a very good effect in removing the slough, and where they are frequently changed, and the wound cleansed, is very good treatment, but the wet cloths, which keep down the inflammation, and also keep the wound moist until healthy granulations spring up and remove the slough, which will occur in from three to four days, seems to be all-sufficient. After the slough has been removed, and there are any further signs of gangrene remaining, the application should be repeated, always

giving ample time for the slough to be removed, unless the fetor can be detected, which is a certain indication that the disease is still lurking in some portion of the wound, and should at once be sought, giving it no time to spread, which it will do very rapidly if not checked, and thus all former treatment will be lost.

When the bromine is used, it is necessary to use some precaution to prevent the escape of the vapor. The bottle containing the medicine should be kept tightly closed until the wound is prepared, then it should be cautiously opened, and a small portion poured into a cup containing water. The bromine at once falls to the bottom, the water preventing the escape of vapor. A small glass or rubber syringe can now be inserted and a portion introduced, which can be applied to all parts of the wound, care being taken to introduce it well down into all the cavities. In this, much more care is required than where nitric acid is used. It is sufficient to pour the acid into the wound, when it will gravitate to almost all parts of the wound. Not so with the bromine, it must be introduced to all parts; the swab will answer for this purpose, but not so well as the syringe. After this has been done, the wound should be covered with a piece of cloth spread with simple cerate, to prevent the escape of the fumes arising from the bromine. This, when properly used, is an efficient remedy in the treatment of hospital gangrene, but under my observation is not as successful as nitric acid, owing to the difficulty of applying it, but where it can be thoroughly applied it will in all cases destroy the disease. The result of the treatment of gangrene was not as successful previous to the introduction of bromine by Dr. GOLDSMITH, in 1862, as it has been since, which is owing more, in all probability, to the free use of the scalpel in cleansing and thoroughly preparing the wound, than to any superior quality which it possessed over the acid, and solution of the chlorite of zinc, which had been in use. Where the bone is exposed, it should be kept coated over with simple cerate, to protect it from contact with the caustic. By proper care, in this way, necrosis, or caries, can generally be avoided. The constitutional treatment should

be merely supportive, making free use of stimulants and tonics, with proper diet.

Selections.

ON REMITTENT OPHTHALMIA—STRUMOUS OPHTHALMIA OF CHILDREN.

By HENRY HANCOCK, Esq., Surgeon to the Charing-Cross and Westminster Ophthalmic Hospitals, &c.

[Many years ago, Mr. Hancock published some papers to show that what is commonly known as strumous ophthalmia does not depend upon that particular condition of constitution.]

The disease described under the titles "strumous," "scrofulous" or phlyctenular ophthalmia, is an affection of simple character, depending upon disorder of the digestive organs, influenced by the age of the patient, and presenting a type peculiar to diseases of the earlier period of life. True strumous or scrofulous ophthalmia is, as pointed out by Jacob, an affection of an entirely different character Phlyctenular ophthalmia attacks children of all conditions, whether scrofulous or otherwise; it does not appear to be influenced by station in life, nor is it especially restricted to any particular color of the hair or complexion; it attacks the fat, stout child, equally with the thin, and the highly-fed equally with the child of penury and want. In all cases the principal diagnostic signs of remittent fever are present; more urgent and well-marked, it is true, in some instances than in others, but in all they may more or less be traced, if ordinary attention be paid to the subject. The remissions of severity; increase of fever and heat towards night; the subsidence thereof, and accession of perspiration; the eruption about the nose and corners of the mouth; picking the nose and lips; rubbing the eyes; fœtid, sour, and disagreeable breath; the strawberry tongue, covered with moist fur; the enlarged liver; the tumid, hard, and swollen belly; irregularity of the bowels, sometimes constipated, at others relaxed; the evacuations clay-colored, or dark, or slimy, and mostly offensive. The tendency to eruptions over the face, head, and body, so invariably present in this form of ophthalmia, bears such strong affinity to the symptoms of the remittent fever of children, that I

have long regarded the ophthalmia of children as a disease of the same character, and have consequently discarded the term "strumous," and "scrofulous," as applied to it, designating it as *remittent* ophthalmia.

The term "strumous ophthalmia," has heretofore embraced a large class of cases. Mere congestion of the palpebral, or of the ocular conjunctiva, with or without phlyctenular or pustular eruption; inflammation of the sclerotica or of the cornea; ulceration; suppuration, or sloughing; interstitial deposit between the layers of the cornea; certain affections of the iris; and in some rare instances, of the retina, if accompanied by intolerance of light, having been classed under this designation. I propose, however, in this and subsequent papers, to consider first, the more simple form, the remittent ophthalmia; secondly, the "phlyctenular, or pustular ophthalmia," and lastly, the "strumous."

Remittent ophthalmia is the most frequent and simple, depending upon derangement of the digestive organs; it may attack any child in whom such derangement obtains. It is for the most part confined to the superficial tunics of the eye, and is very frequently accompanied by cutaneous eruptions. It may exist for a great length of time, without producing any serious permanent results. The complaint will often be confined to the conjunctiva of the eyelids, the edges of which are loaded with a viscid secretion. It its more severe form, the disease extends to the ocular conjunctiva, the redness being restricted to one or more fasciculi of superficial vessels, extending from the back of the eyeball to the margin or front of the cornea, where they commonly terminate in phlyctenulæ, which are either absorbed, leaving superficial white specks when seated in front of the cornea; or, suppurating and bursting, result in superficial or deep-seated ulceration, occasionally penetrating the entire thickness of the cornea, allowing the iris to protrude; or, in other cases, destroying a larger portion of the cornea, and changing its brightness altogether into a yellowish slough. These two latter forms are always succeeded by permanent adhesion of the iris to the cornea, and the formation of a cicatrix, which rarely disappears. The local symptoms in the milder forms, are pain; intolerance of light; redness; and the formation of simple pustules, with increased flow of tears. In the severer forms, ulceration, or even sloughing of the cornea will sometimes occur. In the majority of cases there is more of discomfort than of actual pain, although in some instances the pain is very severe. It is usually remittent, being absent during the day, recurring at

night, and subsiding towards morning. In the early stages the pain is always sharp, darting, and intermitting; but when phlyctenulæ, pustules, or ulceration of the cornea exist, a continuous sensation of grit or sand in the eye obtains. The intolerance of light is a symptom so prominent and distressing, that many authors have been led to regard it as the cause, rather than the result of the disease. Experience, however, proves the error of this opinion; it is very true that with the subsidence of the intolerance of light a very marked improvement in the disease takes place; this, however, is not due to the subsidence of the intolerance of light, but to the removal of the cause which produced both it and the disease, the intolerance of light being merely a symptom of the disease, a sympathetic or functional affection, a morbid sensibility, depending upon disorder of the alimentary canal, and various secretions.

Although permanent and persistent in some, the photophobia is generally remittent; it appears to alternate with the pain, for whereas the latter is less urgent in the morning, and during the day, the intolerance of light is most severe at those times, subsiding towards evening, when the pain becomes more aggravated. The intensity of the photophobia, however, must not be regarded as any criterion of the severity of the disease; the less urgent and serious the malady, the greater, in most instances, will be intolerance of light. A child may open its eyes when considerable disorganization has taken place, but when the attack is comparatively slight, it will make great effort to exclude the minutest ray of light.

Treatment.—In the *British Medical Journal*, June 4, 1864, Mr. Cheshire, Senior Surgeon to the Birmingham and Midland Eye Hospital, in advocating the use of tartarised antimony as a remedy in strumous ophthalmia, observes, "I am aware it has long been the practice of ophthalmologists to administer a single dose of tartarised antimony, as a beginning to the treatment of strumous ophthalmia, &c., &c., but it does not appear to have been resorted to as a remedy, *per se*, for the cure of strumous affections of the eye."

In the same Journal, for the 25th June, 1864, Mr. Price, of Margate, in eulogising Mr. Cheshire's notice, adds, "That the plan of treatment therein recommended, is both little known and little practised, I am fully convinced; and my object in again bringing the subject forward is to endorse the statements of Mr. Cheshire, in the hope of inducing practitioners to follow this mode of treatment on a more extended scale."

It is very evident that Mr. Cheshire and Mr. Price had either

forgotten, or had not read my lectures published in the *Lancet*, in the year 1852, in which I gave the result of my treatment during several previous years of strumous ophthalmia (so-called), by tartarised antimony, in opposition to the then existing treatment of that disease by tonics, and the local application of arg. nitratis, &c. Since the year 1849, I have not only steadily pursued this treatment, but strenuously recommended its adoption by the numerous surgeons who, from time to time visit the Royal Westminster Ophthalmic Hospital. Under these circumstances, I may be excused for again bringing forward the substance of the treatment I have so many years advocated.

The main objects to be steadily borne in mind in the treatment of remittent (strumous) opthalmia, are, relief of the organs of digestion, and the correction of the secretions. If these are attained, the other symptoms will improve, and the eyes share in the general change for the better; but unless a systematic plan, embracing diet, clothing, good nursing, as well as medicine, be adopted, little benefit will result. As I have before observed, remittent ophthalmia may, as a general rule, always be traced to a disordered condition of the digestive organs, a want of digestive power, an incapability of properly assimilating the food. The liver is sluggish, irregular in its action, and frequently enlarged; the mesenteric glands are commonly increased in size; the secretions are vitiated, and the blood consequently becoming impoverished and impure, the whole system is deranged. The child is rendered pale, weak, and fractious; its appetite is lost, or very capricious, and it is said to be strumous, weak, and delicate; but this condition need not become permanent, if the case be judiciously treated; if it is not at the outset erroneously supposed to depend upon cachexia or debility. The debility is for the most part more apparent than real, and procceds from irritation, or of oppression rather than of actual weakness. Remove the cause, and the debility will disappear *pari passu.*

I will not here enter upon the local treatment usually resorted to, as I have long ceased to employ it in remittent ophthalmia, excepting where the cornea has given way and the iris protrudes; in such cases, touching the protruding iris with the pointed nitrate of silver and applying the extract of belladona over the eyebrow are very useful. From repeated trials of the various local remedies recommended, I am convinced that they do more harm than good, causing great suffering without compensating benefit; indeed, children get well much more quickly when they are not used at all. The treatment should commence with an

emetic of tartarised antimony, given as advised by Dr. Mackenzie, viz., in minute doses at frequent intervals, until free vomiting is excited; and this in all cases, however attenuated or however stout the child may appear, the object being to relieve the stomach of its offensive contents and to render its secretions more natural; to correct and restore the secretions of the kidneys, liver, and other glandular structures, and to influence the capillary system generally, so as to improve the condition of the skin and mucous membrane, and allay the morbid excitement of the nervous system.

This is best done by the tartarised antimony given as above, and it is very important that attention should be paid to the mode of its administration. The mere inducement of vomiting, the simple evacuation of the contents of the stomach is not sufficient, unless the medicine by being absorbed into the blood is enabled to produce other results; hence I have not observed anything like the same amount of good to result from sulphate of zinc, nor the ipecacuanha powder, or even from the tartarised antimony when the latter is administered in a single large dose to cause immediate vomiting. The following is the form which I usually employ:—

℞. Antim. tart. gr. iv.; syrup. ℥iv.; aq. cinnamoni ℥iij.; aq. distill. ad. ℥viii.

For a child under three years of age, two teaspoonfuls should be given every ten minutes until vomiting ensues; above this age, a tablespoonful should be given at similar intervals. It commonly requires four or five doses to produce the full effect, in some instances more, in a few less. This treatment should be repeated daily, until the intolerance of light begins to diminish, which it will mostly do after the first or second day, although in some of the more obstinate cases, four, or even six days will elapse before the desired result is obtained. When, however, the intolerance of light begins to subside, the emetic should be discontinued, and a powder of calomel and rhubarb, or mercury with chalk, and compound scammony powder every night, or every alternate night, until the tongue becomes clean, the abdomen softer and flatter, and the alvine secretions healthy; as these changes are brought about, the eyes will improve if attention be paid to the diet. When the attack is complicated with skin eruptions, aperients will be required for a somewhat longer period. Should the attack of ophthalmia be preceded by measles, small-pox, scarlet fever, or any other complaint of a highly depressing character, or if the child has been exposed to excessive want, is much attenuated, and covered with a cold clammy perspi-

ration, calomel, even in small doses, should not be given, except with great caution; in no instance should more than one dose be given without the patient being seen, as should ptyalism take place, such extensive sloughing of the fauces, gums, and even of the lips and cheeks may ensue as to destroy the child in a very few days. I have known this occur more than once. With such children it is safer to abstain from the use of calomel altogether, and to substitute the compound scammony powder, with taraxacum and henbane. When mercury, however, is especially indicated, I always combine it with quinine, taking care not to push the medicine to such an extent as to produce ptyalism.—*Journal of British Ophthalmology, October* 1864, p. 35.

REVIEW AND ABSTRACTS FROM A COLLECTION OF MEMOIRS UPON AN IMPORTANT DISCOVERY OF SOME OF THE UNKNOWN FUNCTIONS OF THE PANCREAS.

By Professor LUCIEN CORVISART, Physician to the Emperor, Officer of the Legion of Honor, &c., &c.

Translated for the St. Louis Medical and Surgical Journal, By J. K. BAUDUY, M.D., St. Louis, Mo.

A recent publication by Victor Mason et Fils, of Paris, has greatly interested us. Lucien Corvisart, in contributing to medical science his collection of memoirs, upon a function so obscure as that of the pancreas, has greatly added to our previous knowledge upon the subject, and has thrown many additional rays of light upon a study which has so long been veiled in profound darkness, and hidden from the most penetrating and indefatigable searches of physiological exploration. This little book will not fail to interest the profession at large, and will certainly greatly repay them for the attention they may bestow upon it. The more arduous the avenues of approach to certain medical subjects, the more intricate and unintelligible their comprehension, the greater are the energy and perseverence which have always been displayed by our profession, in overcoming all the obstacles and difficulties, in the way of clear elucidations of obtruse and doubtful problems. The pancreatic function has long been a source of uncertainty and dispute among physiologists, and the task of clearing away many of the clouds that have so obstinately hung around this subject

replete with so much interest, and *pathological importance*, was reserved for the genius of Corvisart. He does not arrogate to himself, however, the claim of the first discovery of the functions to be described, as the idea first originated with Purkinje and Pappenheim, in 1836, but he only has established and *proved* laws which govern the pancreatic function, that are based upon experiments which were probably suggested by his familiarity with their views. At all events, great credit is due to him for his scientific and successful elaboration of views, be the original conceiver of them whomsoever he may. Nor does the author undertake to explain the entire physiology of pancreatic functions, but merely professes to have ascertained some very important and interesting uses of the gland, based upon numerous proofs furnished by his investigations, and resting upon the broad basis of scientific experiments, which all who may feel inclined to be incredulous, may repeat for themselves in their own studios. Our previous knowledge of this organ, the author does not entirely controvert—he contents himself with boldly maintaining *new truths*, which, as zealous devotees in pursuit of professional knowledge, we ought carefully to collect, weigh, and balance, before we finally either receive or reject. The weight of authority in France and Germany, tends to strengthen and confirm the position taken by the author. The first statement that attracts our attention, and causes us to pause and reflect in reading the memoirs, is the close *analogy* said to exist between pancreatic and gastric digestion. The author then goes on to say, that the most important function of the pancreas is the digestion of *nitrogenized elements of food*. These constitute the principal topics discussed in his little work, though there are, however, some secondary but very useful points which are taken into consideration, the principal of which are as follows, viz.:—

"1st. The *intra venous digestion of the blood itself*."

This form of digestion resulting, perhaps, in the constant renovation of this fluid by means as singular as they are little understood.

"2d. The fact that certain azotized alimentary substances are *digested in variable quantities*, this depending as to whether the pancreas or stomach is in the better state of preservation, and which of the two organs most completely retains and performs its digestive functions.

"3d. The influence of stomachic digestion (that is to say, the normal formation by it of gastric peptones) upon *the production of the pancreatic ferment*, the quantity and quality of

which are of so much importance to the welfare of the economy.

"4th. A secondary, but very interesting point, is that of pyloric *insufficiency*, as a cause of either gastric or intestinal dyspepsia."

Owing to my small amount of space, it will be impossible to give a full description of the author's opinions. I shall therefore be obliged to confine myself to the principal topics of interest and importance he discusses. I shall often quote his own words, in order to be accurate and in exact conformity with his precise meaning, and I will be likewise compelled to give very literal translations to avoid all possibility of misrepresenting his views.

The subject is so new, and so little able are the generality of the profession to pronounce *definitely* at present upon the topics under discussion, that it will be useless to offer comments and criticisms upon *experimental deductions* which we cannot fully appreciate until we convince ourselves by the same course of investigations pursued by the author, which is open to all inquiring minds. Our previous knowledge of the pancreatic function consisted in what we were taught to believe was its action on amylaceous matters, converting them into dextrin and glucose, with its additional and perhaps more important office, that of emulsifying *fatty matters*.

As I have already stated, the first discoverers of the influence exerted by pancreatic digestion upon azotized aliments, were admitted by the author to be Purkinje and Pappenheim, in 1836, whose views were condemned afterwards, however, by all physiologists, and finally were somewhat modified and confused by Claude Bernard, in consequence of two mistakes made whilst experimenting with the results of putrefaction. Great are the advantages to be derived from the perusal of this learned work of Corvisart, whose laborious researches and five years of indefatigable study, at least entitle it to our attentive consideration. In addition to all this, its weight and authority are unquestionable, when we consider the high professional attainments, and elevated position so long and usefully occupied by the distinguished author. Nor are the advantages to be gained by us in weighing these subjects merely imaginary, but they are *practical*, because the doctrines inculculated are not useless theoretical expositions; on the contrary, the author has drawn *pathological deductions* from his experiments which must interest all practitioners of medicine, and obviate many of the difficulties encountered by them in the diagnosis and treatment of the various causes of dyspepsia.

In the words of the author, "in the present state of our knowledge, what precise information have we to guide us concerning intestinal dyspepsia, its causes, mechanism, and rational treatment?" Corvisart's views, which at first met with obstinate incredulity and rigid criticisms, are every day gaining converts abroad, and many eminent physiologists, such as Meissner, Wittish, and Bach, Danilewski, Stokwis in Germany; Harley in England; Prof. Schiff in Switzerland, &c., have fully confirmed, by repeated experiments the views of the author. Longet has not only adopted and sanctioned Corvisart's contribution to our knowledge of the physiology of digestion, but he publicly teaches them to his large classes. To return to the author's opinions again, I shall continue by freely quoting his own words upon the principal topics with which it behooves us to become acquainted. The pancreas is, as it were, a supplementary organ, whose action after a large repast is auxiliary of gastric digestion. Pancreatic digestion, however, is independent of gastric digestion. The former does not merely consist in transforming into other peptones, those which have already been acted upon in the stomach. In other words, gastric peptones do not undergo changes in consequence of the pancreatic juice, but on the contrary, the author positively maintains, that when a nitrogenized element of food, or a portion of one, has been completely submitted to the process of gastric digestion, it is almost invariably, *directly* absorbed by the stomach. "There are gastric peptones and pancreatic peptones." Corvisart entirely rejects the idea entertained by certain physiologists, who assert that the stomach only macerates, or subdivides the food without dissolving it; he maintaining, on the contrary, that every article of albumenoid nourishment submitted to the action of the stomach, is not divided, but *dissolved*, passes through a filter, as it were, and is absorbed by the membranes themselves. In fact, he adds that the pancreatic function comes into play upon portions of albumenoid substances which have left the stomach *before* any transformation had taken place by gastric influence, and that in certain cases the action of the pancreas is so considerable as fully to equal that of the stomach. Here, the author remarks, that as regards the mere quantity of secreted digestive fluids, care should be taken to avoid fallacious conclusions therefrom, because the stomach is apt to be regarded as much more powerful, from the fact of the gastric secretion being sometimes more *abundant* than the pancreatic fluid; but by way of compensation, he observes that the pancreatic fluid is *ten times* stronger and higher in its possession

of ferment (pancreatine). The pancreatic fluid enjoys the remarkable privilege of acting much more *rapidly* upon azotized aliments, whether they be alkaline, neutral, or acid. It is strange that these functions are so entirely independent of each other, that the pancreatic fluid alone is able to accomplish the digestion of food which has not been subjected to gastric influences. Hence, albumenoid matters, without any preparation whatsoever, directly placed in the intestine in a crude state, or in the pancreatic juice outside of the body, will, in both places, be perfectly and completely digested. Moreover, to acquire this digestive property, the pancreatic juice has not to be mixed with either the "succus intestinalis," or the bile. The author clearly proves that this process may be accomplished outside of the body with the pancreatic secretion alone, or isolated pancreatine, and that the function will be performed as certainly as it would be were it exercised in the interior of the duodenum itself. As long as the gastric and pancreatic juices are separated, and act successively, they exercise their respective functions perfectly, and the quantity of albuminose resulting may be almost doubled; but it is a remarkable fact, that if in a *pure* state the two digestive ferments simultaneously meet, the respective digestions will cease to progress so freely. Far from the digestive products being increased or doubled by the circumstances of the mingling of these juices, they will, on the contrary, be greatly diminished; because, in this state, which is not a physiological one, the pepsine and pancreatine will neutralize one another. It may here be objected, that this union of the juices can not well be prevented, but Corvisart proves that nature guards against this contingency by three different methods, viz.:—

1st. By means of the pylorous which separates the two ferments.

2d. By gastric digestion itself, by means of which the pepsine in forming peptone becomes exhausted and consumed.

3d. By the bile, in which, as Pappenheim has demonstrated, destroys the activity of the gastric ferment.

By this last assertion, the author does not mean that the bile precipitates the mass of peptones, produced by the action of the stomach, so that digestion is destroyed, and has to re-commence; but, on the contrary, *the bile itself* is precipitated, by the acidity of the gastric juice or chyme; finally, very little gastric peptones arrive in the intestine, as the stomach has previously absorbed them.

Intra-venous digestion is so beautifully and satisfactorily explained, that I will quote the author's own words, verbatim:—

"During *the first three hours* that follow a meal, a period during which digestive *dissolution*, transformation, and absorption, are not far advanced, the blood of the portal vein (compared with the venous circulation at large) does not become enriched with a sensible quantity of nitrogenized materials by digestive absorption; on the contrary, in the intestine under the influence of the alkaline pancreatic juice, the elements of the blood, fibrine, and globules, become transformed into albumen, (caseiforme) by a commencement of digestion.

"But if it be taken into consideration that during the first three hours of digestion: Firstly, that the pancreatic juice poured out into the duodenum remains there in a pure and active condition; Secondly, that it is able to pass into the portal vein, because absorption by the mesenteric veins is not suspended; Thirdly, that the pancreatic secretion can exercise its digestive action on an alkaline medium as that of blood. If one takes into consideration, on the other hand, that it is precisely during these first three hours of digestion that a great part of the globules and fibrine of the blood of the portal vein are formed *in equal proportions* inside of this vein into albumen, (commencement of a similar transformation to that which they underwent in the intestine, under the influence of the same pancreatic juice), it is difficult to recoil before the hypothesis of a *veritable intra-venous digestion*, a function which is new to us, and which it is necessary to study. No real difference has been traced between the nitrogenized matters called extractives, and the albuminose produced by gastric or pancreatic digestion. The chyliferous vessels, *the portal vein and its continuation*, *the hepatic veins*, that is to say, the vessels which receive most directly the products of digestion, are, after the portal vein, a good deal richer in extractive matters (albuminose) than the rest of the blood; it will be remarked that they contain also more glycose. In nutriments (albuminose, glycose) the richness of the vessels of the liver can be explained by gastric intestinal absorption, to which may be added the prolonged intravenous digestion, without any agency of the liver whatsoever in the matter."

The author draws certain *pathological deductions* from the preceding physiological laws. To me, his reasoning is at least fair, if not conclusive, and is co-relative with the premises. In connection with albuminoid aliments there exists almost certainly a duodenal indigestion caused by the viciation, insufficiency, or absence of pancreatic secretion; the symptoms of which do not manifest themselves before the end of the second, or commence-

ment of the third hour of digestion. This form of indigestion is accompanied with more profound sensations of inconvenience than gastric dyspepsia. In these cases the internal use of pancreatine is indicated.

The following are some of the secondary causes of duodenal dyspepsia:—

1st. Almost entire insufficiency of that division which the gastric juice effects *at least* in those articles of nourishment that it has not as yet transformed into peptones. The pancreatic digestion is in consequence slower, as gastric oftentimes is, when the teeth have not performed their function. This form of secondary pancreatic dyspepsia is cured by the appropriate treatment for primitive gastric dyspepsia.

"2d. Superabundance of the gastric juice, or insufficiency of the pylorous.

"3d. Insufficiency in the biliary secretion.

"4th. A dyspepsia that may be called portal, or hepatic, resulting from a viciation of intra-venous digestion."

Certain symptoms of dyspepsia, of gastralgia, and hepatalgia, might erroneously be attributed to the stomach, intestine, or liver; but rarely result from the absorption of the pancreatic juice by the portal vein, the secretion being too abundant, active, and irritating.

"When it becomes more urgent to relieve the pain and disturbed functional actions of the digestive organs, than to reëstablish the muscular tone, articles of food which are the most *completely* and *rapidly* dissolved should be preferred, without considering the quantity of peptone that they may furnish.

"When it becomes more desirable to reëstablish the muscular tone than to alleviate the gastro-intestinal troubles, we must then, on the contrary, select a nourishment which, for an equal digestive force, furnishes the greatest amount of peptone, so that it may be more slowly dissolved and digested."

It is useless to give but one kind of azotized aliment for any length of time, not only on account of one kind of nitrogenized nutriment (or peptone) being insufficient to repair the various organs, but also because the same nutriment given exclusively and repeatedly (eight consecutive days, for example) ceases sufficiently to excite the gastric secretions, and no longer entirely undergoes digestive transformation.

The author attributes some of the mistaken notions we have entertained of the pancreatic functions, to the fact of conclusions being arrived at by experimental processes, which are in-

correct. For the experiments made by himself, and the unsatisfactory ones of other physiologists, I must refer to the author's text, as they are too numerous to be cited. In speaking of the independent action of the pancreas, he states that the power and influence of the last named organ is such, that in acting upon the nitrogenized elements to transform them into peptones, it can furnish a sufficient quantity of the latter to renovate the entire weight of the body (estimate of the weight being dry) in three hundred days; whilst, on the other hand, the peptones produced by gastric action would accomplish the same result in two hundred days. In order that all may try these experiments, I will give some of the essential conditions laid down by the author as requisite to ensure their success and accuracy.

Supposing we desire to obtain the pancreatic juice by the ordinary method of producing a fistulous opening, and inserting a silver canula into the duct, the following rules must be observed:—

1st. Remembering the *greater rapidity* of pancreatic digestion compared with gastric digestion, we must not prolong pancreatic action beyond four or five hours; otherwise, the conditions will become anti-physiological, because long before this time has elapsed, food submitted inside the body to the action of this juice is not only digested, but has even been absorbed some length of time. Hence, not observing this precaution, putrefaction will necessarily ensue and lead us astray.

2d. To obtain the true and genuine pancreatic juice, capable of digesting, it must not be withdrawn during intestinal fasting. The secretion ceases when the food commences passing into the intestine from the stomach through the pylorus (that is towards the fourth hour after a repast), and reappears when the stomach is empty (which is about the eighth hour).

3d. If we attempt to obtain the experimental results alluded to by an *infusion* from the gland, we must, to be successful, extirpate the gland between the fourth and seventh hours of a good gastric digestion; because if we take it before the fourth hour, its ferment will yet be imperfect; and after the eighth the gland will be exhausted of its contents in consequence of the quantity of pancreatic secretion already furnished. A juice will be obtained, it is true, but not an efficient digestive fluid.

4th. If the juice required to furnish the demonstration should be obtained through the process of a fistula, it is obvious, for the reasons above alluded to, that the fourth hour after a meal should be chosen to perform the operation; otherwise, the stom-

ach, on the one hand, disturbed and irritated, and not being able to accomplish fully its digestive action, will retain the food, and cause the intestine to remain in a state of fasting; on the other hand, the pancreas itself, irritated before the elaboration of its active ferment, will only furnish a vitiated and weak secretion.

In conclusion, it must be remembered that the juice which escapes during the first three hours after the operation is alone to be experimented with. In alluding to the emulsifying property of the pancreas, the author states that those who have *only* succeeded in verifying *this* function have reasoned falsely; because it is impossible to argue against the digestive properties of the pancreatic fluid on nitrogenized food, simply because the pancreas has other functions, such, for instance, as the converting of starchy substances into glucose, or the emulsifying of fats. These properties are entirely distinct. The process of emulsion can go on during *intestinal abstinence*, and is so far from being a *true standard* of pancreatic function, that it can be more readily and largely accomplished *the more vitiated and alkaline the pancreatic juice becomes.*

The pancreas exercises a supplementary function in digesting nourishment which the stomach allows to escape without its having been digested. The pancreas is certainly endowed with a digestive property analagous to that of the stomach, possessing an independent action, and by its power is of equal rank. The author relates an instance, which he witnessed, of a pancreas taken from a man who died suddenly, which digested in four hours almost 3.420 grains of concrete albumen, and 7.752 *grains of fibrine in one hour;* a weight which is equivalent to almost a half day's ration of nitrogenized nourishment allowed to a French cavalry soldier. This, upon a rough calculation, would equal seven ounces and a fraction of albumen, and $1\frac{249}{720}$ of a pound of fibrine. A very necessary condition for the formation of the pancreatic ferment in abundance, seems to depend upon the *quality* of the blood, which is determined by the presence in the latter of peptones made and absorbed by the stomach.

We are now obliged to conclude this brief review, without noting many points of interest to which we had desired to draw attention. The views of the author have, however, been presented in a condensed form, and if all his experiments have not been described, it must be attributed to want of space and time.

A great part of the subsequent portion of the work is devoted to the description of experiments performed with the principal azotized substances, viz:—albumen, fibrine, caseine, &c. An

admirable system has been followed in giving these results, which avoids all confusion. He first takes, for instance, albumen, and subjects it to the influence of the gastric secretion, carefully noting the results; then, entirely reversing the experiment, he places the nitrogenized aliment in the pancreatic fluid, and gives a faithful account of the rapidity and peculiarities of the respective digestions. The last part answers objections made to his experiments and reasoning by those who at first rejected them as inconclusive or erroneous. At some future time we may give additional abstracts, and also the result of some experiments about to be repeated.

CLINICAL REMARKS ON THE VALUE OF BELLADONNA IN THE TREATMENT OF IRITIS.

By JABEZ HOGG, Esq., Assistant-Surgeon Royal Westminster Ophthalmic Hospital; Editor of the Journal of British Ophthalmology.

After a careful examination into the relative value of the various agents for the cure of iritis, and opium in particular, I believe I am perfectly justified in saying that the chief value of the latter consists in its sedative or narcotic principle, when employed in sufficient doses, for the relief of the pain attendant upon the attack. If we take the trouble to examine a little closely into the published cases of alleged cures without mercury, or with opium, we shall find, remarkably enough, that in nearly all, at some period of the treatment another remedy, belladonna, has been employed, perhaps applied externally, in combination with some other potent drug. For example—on looking over the cases published by Dr. Williams, of Boston, we at once notice the secret of his success lies in this practice—he invariably commences the treatment "with an *instillation of a solution of atropine;*" this is ordered to be repeated until complete dilation of the pupil is produced; at the same time iodide of potassium or some other equally efficacious remedy is prescribed in full doses. What better treatment in the majority of cases could be adopted? There are other practitioners, we fear, who, while professing to cure by the agency of morphia alone, do not possess the honesty of Dr. Williams, but are most careful to conceal what they employ in conjunction with their boasted remedy.

It is generally conceded that in all cases of iritis, the greatest possible danger to be apprehended is in the formation of adhesions between the iris and the capsule of the lens, posterior syne-

chia, or between it and the cornea, anterior synechia; the latter is not of very frequent occurrence. In the acute stage of the attack lymph is effused, and the pupillary space wholly or partially obliterated in a comparatively short time, and thus vision will be quickly lost, even should the choroid and retina escape the destructive process set up by the iritis. In milder attacks the danger of synechia and a fixed pupil cannot always be avoided, more especially if the attack is unheeded by the patient, or if not seen by a medical man during the first thirty or forty hours. Even if promptly attended to, the patient may not escape with a perfect iris; and therefore the case can only be said to be cured if no adhesions or irregularity of the pupil remain after the attack has been entirely subdued.

It is quite obvious, indeed, that our chief care in the treatment of this malady must be directed to preserve the iris intact, free from the smallest deposit, and quite circular. To fulfil this indication we must, from the very first, keep the pupil well dilated, and thus place it as much as possible out of harm's way and in a state of rest. To expect to effect this by any so-called constitutional remedies, without at the same time employing belladonna or atropine, is to neglect a most important point of treatment and jeopardize your patient's vision. Whereas, by a liberal use of belladonna or a solution of atropine (2 to 4 grs. to the oz.), or a fiftieth part of a grain of a very finely levigated powder of the sulphate of atropine, applied to the conjunctiva of the lower eyelid, and repeated at intervals of three or four hours, until the pupil becomes fully dilated, and keeping it in this condition, we may, I believe, almost adopt any kind of treatment, or even leave the patient to careful nursing, particularly if the case be one of a non-specific uncomplicated nature. After the pupil has been fully dilated, the further application of atropine once daily is quite sufficient to maintain the full effect and keep the iris free from danger; but if the lymph or interstitial deposits can already be detected, it will be found to be much more difficult to dilate the pupil, and it is under these circumstances that our good old remedies, mercury, iodide of potassium, &c., come into play with the happiest results, and will not only preserve sight, but save the iris from complete disorganization.

In England, the value of mydriatics in the treatment of iritis has been very generally recognized, and always highly esteemed by our ophthalmic surgeons from a very early period. This is not the case in Germany, and some other countries. Dr. Mackenzie, in his early writings, says:—"Belladonna ought to be employed in every case, and in all stages of the disease. The

usual mode of employing it is in extract, moistened to the consistence of cream,* and liberally painted on the brow and eyelids morning and evening. As it is during the night that the disease appears to make most progress, and as during sleep there is a natural closure of the pupil, which must favor the permanent contraction which iritis tends to produce, the evening is evidently the most important time to apply belladonna. After bloodletting it will be found to act much more powerfully in dilating the pupil.

"As soon, in general, as the inflammation has subsided in any considerable degree, and the fibres of the iris have become somewhat freed from effused lymph, the pupil will begin to expand, and even in neglected cases, where it has been allowed to become almost obliterated, the continued use of belladonna for months is sometimes attended by a gradual dilation of the pupil, an elongation of the threads that bind it to the capsule, and a corresponding improvement in vision. After the acute inflammation is gone (subdued by extracting blood, &c.), a filtered aqueous solution of the extract of belladonna, or a solution of the sulphate of atropia, may be dropped into the eye morning and evening; applied thus to the conjunctiva, belladonna has more effect than when painted on the skin, and sometimes breaks through adhesions when smearing the outside of the eyelids has failed."

So little appears to have been known in Germany of the employment of mydriatics, that up to a very recent period we find it stated of a Prussian quack oculist, that he derived a large annual income from patients who literally flocked to him for the cure of cataract, &c. His treatment chiefly consisted in the application of belladonna drops to the eye, belladonna plasters to temples, and mercurials. He kept his secret by supplying his patients with drugs from his own store. It was, therefore, high time some one better qualified for the task should fully satisfy himself of the value of belladonna; and, accordingly, Dr. Graefe, in 1856, published a paper in which he communicates the results of his experiments with mydriatics in the treatment of iritis, "the dangers of which," he says, "in general have materially diminished, since the introduction of a bold use of mydriatic remedies in the acute form."

[There are some people in whom great irritation follows the use of this drug. No matter what preparation is made use of, the distress to the patient is equally great.]

* Glycerine is the best vehicle for dissolving or thinning the extract, and possesses great advantage over water; it keeps moist for a long time when applied to the brow.

In such cases (of iritis), as well as where there is any intolerance of the drug, I am in the habit of taking away a small quantity of blood from the temple, by cupping, or by leeches applied either to the nose or lower eyelid; and should this fail, to paracentesis or division of the ciliary structures; especially the latter where there is diffuse cloudiness of the aqueous humor. Many of these to-be apprehended evils are in part, if not wholly due to some impurity of the drug; at other times to the careless preparation of its solution, such as dissolving the atropia in the strongest spirit of wine, or adding more spirit than is actually wanted to facilitate its perfect solution in the distilled water. Again, sometimes very strong solutions are employed, which, in my opinion, are highly objectionable. In no case have I found it necessary to exceed 4 grs. to the oz., and more frequently I employ a 2 gr. solution. Nothing, indeed, answers so well as the latter; and if this cannot be borne, we shall find it advantageous to apply over the brow an ointment of the sulphate of atropine, or the belladonna liniment of the British Pharmacopœia, both of which are efficient preparations. Their action is of course much slower, but in peculiar cases this is decidedly an advantage over the effects produced by the more rapidly acting solutions, which may certainly be classed among the abuses of this valuable agent in those peculiar forms of eye disease requiring the application of mydriatics to affect the movements of the iris.—*Journal of British Ophthalmology, October*, 1864, *p.* 54.

ON TREATMENT OF SQUINT BY OPERATION.

By J. W. HULKE, Esq., Surgeon to the Royal London Ophthalmic Hospital, Moorfields.

[This article is a review of 106 cases of squint treated by operation, with remarks upon the operation. In 50 cases of convergent squint, Mr. Hulke adopted the operation in general use by his colleagues, and which he distinguishes as "the Moorfields' operation." In the remaining 49 he adopted the operation of Von Graefe; which operations he then proceeds to describe.]

In the Moorfields' operation, the eyelids having been separated with a spring speculum, the assistant turns the cornea outwards, seizing, for this purpose, the conjunctiva boldly, close to the outer border of the cornea, with a rats-toothed forceps. The operator seizes, with a similar forceps, a small fold of con-

junctiva, nearly midway between the inner edge of the cornea and the caruncle, just over the lower border of the tendon of the Rectus internus, and snips it with slender blunt-pointed scissors, so as to make a small horizontal incision. The fascia, which this incision exposes, is in turn snipt through. Next, a blunt hook, with rather a large curve, is passed through the wound beneath the tendon, which is put on the stretch by slightly raising the hook, and divided with small snips of the scissors between the hook and the sclerotic.

The advantages claimed for this operation are those which it possesses in virtue of its subcutaneous character, and the absence of that recession of the caruncle and undue prominence of the eyeball which are not infrequently observed where the conjunctiva has been freely divided.

I believe that these advantages are gained where care is taken to keep the conjunctival wound small, where unnecessary disturbance of the fascia is avoided by using a hook with not too large a curve, and by not sweeping the hook too widely in search of the tendon, where the tendon is divided strictly at its insertion, and by small snips without a wide separation of the scissorblades, and where the fascia is only cut to the requisite extent for the perfect division of the tendon. Where these precautions are neglected, the Moorfields' operation loses somewhat its subconjunctival character, and should an unnecessary division of the fascia oculi have been made, retraction of the caruncle will hardly be absent when cicatrisation is complete.

The objections that the operation is not so easily performed, and that the complete division of the tendon is not so certainly known as where a free division of the conjunctiva and fascia over the tendon is practised, deserves little consideration; for the greater difficulty, if indeed it exists, is more than outweighed by the superior results of the subconjunctival operation, and because the surgeon may rest assured that the tendon has been thoroughly divided if he can bring his hook up to the edge of the cornea. The thrombus and ecchymosis, which are not very infrequent after this operation, are more real objections, though they may be partly avoided by making a counter-wound over the upper edge of the tendon, under cover of the upper eyelid.

In v. Graefe's operation, the eyelids are separated, and the eye is turned outward by an assistant, in the same manner as in the Moorfields' operation. The surgeon makes a small opening in the conjunctiva, with sharp-pointed scissors (which are curved on the flat, and have an eccentric hinge), between the insertion of the tendon and the inner edge of the cornea, but

rather nearer the upper or lower edge of the tendon. He then slides the scissor-points beneath the conjunctiva, and snips a small hole in the fascia, through which he passes a hook (with a slightly swollen end and shorter curve than that used in the Moorfields' operation) under the tendon, which he stretches by pushing it on the convexity of the hook towards the cornea, and cuts at its insertion. The external wound need scarcely be larger than in the Moorfields' method, and when the operation has been well performed it as rarely inflames and suppurates. The button of granulations, which is not infrequently very troublesome after operations where all the tissues have been freely divided, occurred in only one of my 49 cases. I think there is less infiltration than after the Moorfields' method, the directness of the wound allowing the blood to escape readily. In both methods I think that the tendon is cut with equal certainty, and at the same point.

[After giving a tabular view of the cases, the author describes "Pritchett's operation" as follows:]

In this operation, the conjunctiva is divided near the inner border of the cornea, and dissected in a flap, together with the fascia off the inner side of the globe. This liberates the tendon of the Rectus internus from its acquired faulty place of insertion. The Rectus externus is next divided, in order to allow a sufficient inversion of the cornea. Lastly, the wound at the inner side of the eye is closed with fine silk stitches, after removing so much of the free edge of the conjunctival flap, that the closure of the wound draws the sunken caruncle forward, and gives the cornea a slight convergence. The tendon of the Rectus internus which has been brought forward with the fascia and conjunctiva, unites itself to the globe at an anterior point, nearer the situation of its normal insertion. The fine stitches give little trouble; they fall out in a few days, or they may be removed at the end of a week. Slight convergence is always desirable at first, because the cicatrix at the inner side of the eye always yields to some extent, and if at the time of the operation the vertical meridian of the cornea has only been brought to the middle of the lid, the final correction of the divergence will be imperfect.—*Ophthalmic Hospital Reports*, *Vol.* iv, 1864, *p.* 160.

Book Notices.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, at its Twelfth Annual Meeting, held in Cincinnati, O., September, 1864. Also, the REVISED CONSTITUTION AND ROLL OF MEMBERS. Philadelphia: MERRIHEW & SON, Printers, 243 Arch Street. 1864.

This is a neatly bound volume, of 355 pages. In addition to a full record of the proceedings of the last Annual Meeting of the American Pharmaceutical Association, it contains reports and papers on the following subjects, viz.:—Report on the Progress of Pharmacy; on the Drug Market; on the Preparations of Cinchona; on the Extraction and Preservation of Lard; on the Solubility of Camphor in Water; on the Aqueous Extract of Jalap; on the Pharmaceutist as a Merchant; on the Sweet-Gum Tree; on Tobacco; Preparation and Dispensing of Plasters; Bitter Wine of Iron; Glycerin—its Mission; on Spatulas, Stirring Rods, &c.; on a Test for the Resin of Cannabis Indica; on Pyrethrum Roseum; The Press; on the Odor of Commercial Tannic Acid; on the Preservation of Garlic; on a Brandy Substitute; on Capsicum; Remarks on Dialysis; on Southern Prickly-Ash Bark; a Systematic Course of Study and Manipulation for Students of Pharmacy; on the Assay of French Brandy and Whiskey; on the Quality of Sherry Wine of our Commerce, and its Assay; on Some Medicinal Spirits; Practical Observations on the Manufacture of Æthereum Oleum; Plan and Description of Balance for Apothecaries' Uses; Description of a New Balance for Use without Weights, &c.

Many of the foregoing articles are short, but they are all of more or less interest and importance, and they constitute a volume which should be in the hands of every Druggist and Apothecary throughout the country.

While it is of special interest to the Druggist, it is also well worthy of perusal by the Practising Physician. Copies of the work may be obtained of E. H. SARGENT, corner of Randolph and State Streets, Chicago. Price $1,50.

ALPHABETICAL INDEX TO BRAITHWAITE'S RETROSPECT. Embracing Parts 1 to 50—1840—1865. Comprising Twenty-five Years of Republication.

This is a volume of 248 pages, consisting of a full and conveniently arranged Index, of almost inestimable value to all who wish to refer to the past volumes of BRAITHWAITE for the last twenty-five years. Its publication confers a great favor on the Profession. For sale at the Book Stores in this City. Price $1,00.

RECENT PROGRESS IN SURGERY. The Annual Address delivered before the Massachusetts Medical Society, May 25th, 1864. By JOHN MASON WARREN, M.D. Boston: 1864.

This is a well-written and instructive address, printed on excellent type and paper. It gives a clear exposition of the progress made in the pathology and practice of Surgery during the last quarter of a century.

Editorial.

ANNUAL MEETING OF AMERICAN MEDICAL ASSOCIATION.—We are happy to learn from the Assistant-Secretary in Boston, that whatever differences of opinion had existed in the Committee of Arrangements, in regard to the Annual Meeting, have been reconciled; and that the Committee are now cordially united and actively preparing for the meeting on the first Tuesday in June next. We are assured that the members of the Association will meet with as cordial a reception in Boston, as has been extended to them in any other city; and we are confident that the business arrangements will be so perfect, as to render the meeting more interesting and profitable than any that have preceded it. Let every Medical Society in the North-West secure the appointment of such delegates as will attend.

CHICAGO MEDICAL SOCIETY—*Annual Meeting.*—The Annual Meeting of this Society was held on the evening of April 7th, 1865. The following officers and delegates were elected, viz.:—

For President,---------- Thos. Bevan, M.D.
For Vice President,---------- E. Marguerat, M.D.
For Secretary and Treasurer, D. N. Tucker, M.D.

Delegates to the Illinois State Medical Society.—Drs. E. L. Holmes, John Reid, A. Fisher, O. Smith, and M. O. Heydock.

Delegates to the American Medical Association.—Drs. C. G. Smith, R. C. Hamill, G. Paoli, T. D. Fitch, and E. L. Holmes.

New York Medical Journal.—We have just received the first (April) number of a new medical journal, with the foregoing title, published in New York City. It is to be issued monthly, containing at least eighty pages, and the subscription price is *five* dollars per annum. The present number is published in excellent style, and its contents are varied and interesting. The only fault we have to find with it, is, the absence of the *name* of its editor. The names of a long list of able "collaborators" are given, but no editor, no responsible head, no master mind, whose individuality is to impress itself on the general character of the work. Notwithstanding this fault, however, we gladly place it on our exchange list, and cordially commend it to the patronage of the profession.

The Purification of the Press.—The London medical journals have entered upon an earnest crusade against the growing indecency of the public press in admitting to their columns the obscene advertisements of quacks, which promises the most satisfactory results. Already many of the leading papers throughout the kingdom have signified their intention to exclude such matter from their columns in future, and public opinion seems at last thoroughly aroused to the enormity of this offence against decency and morality. The immediate occasion of this healthy movement was the late exposure in the courts, by a victim of these extortionate quacks, who possessed a rare moral courage, of their nefarious system of robbing. Its success is all the more gratifying, as it suggests the possibility of similar reformation this side of the Atlantic. How much it is needed here need scarcely be told. We have but to look at the entire surface of some of our journals to find how largely they are de-

voted to the dissemination, not only of the grossest indecencies, but of future misery to a multitude of readers. Such papers are put into the hands of boys and girls of all ages, and find their way to the table of all classes of society, corrupting the purity of the young, arousing the fears of the weak, and encouraging vice by offers of immunity and relief. So outrageous has this system become, that no longer satisfied with the publicity of the largest type in our daily press, the venders of quack medicines and secret remedies paint their obscene notices in the most exposed places by every roadside. It is indeed time that our Legislature should turn its attention to this subject.

No one outside our profession, and we only to a small extent, can estimate the amount of bodily harm and loss of money inflicted upon the unwary and ignorant, who, induced by such advertisements, place themselves once within the power of these quacks. A large sum of money is at once demanded before the promised cure is undertaken, and the fears of the victim are so worked upon, during a treatment purposely designed to aggravate the disease, that he is obliged to pay additional sums until his means are exhausted. We were recently informed by a gentleman, whose official position led to the discovery, that two of the best houses in a certain fashionable street in this city were owned and occupied, under false names, by two of the most notorious of these advertising scoundrels.

There is another class of advertisements, less indecent, but quite as objectionable on the grounds of inhumanity and injustice to the people, of whom they profess to be the guardians, that fill the columns of our journals almost without exception. These are the notices of the innumerable remedies, patent medicines, and itinerants, which display their deceitful promises to the credulous eyes of the sick throughout the land. Our Sunday and religious papers are particularly devoted to the interests of these systems of robbery, and seem even less able to resist the temptation of a large fee than their more worldly daily brethren. The proprietors of such journals cannot screen themselves from the consequences of the course they pursue on the plea of an honest belief in the statements they publish, for no one is better informed than they of the short success of each new remedy or quack they introduce to the public, nor would they dare rely upon them for personal relief in sickness. The amount of evil they thus foster, and for which they are directly responsible, may be in part estimated by the magnitude of the sums received for advertising, which amount to millions in a

single year. This, of course, represents only the pecuniary loss, which falls chiefly upon the poor and middle classes of society; the amount of physical suffering and disease thus occasioned cannot be estimated.

We hope that some of our leading journals will take this matter up, and not only proclaim their own intention of excluding all advertisements of this class in future, but, as in England, insist upon a uniform standard in this respect, upon which the respectability of all others shall be judged. Such a reform in their own conduct will give them the moral weight of self-purity in their judgment of the affairs of others, and gain the commendation and respect of all their readers.

The foregoing constitutes a recent editorial in the *Boston Medical and Surgical Journal.* We copy it for the purpose of fully endorsing its sentiments. There are but few things in modern society that illustrate more clearly the readiness with which a just sense of responsibility may be smothered for a pecuniary consideration, than the almost universal prostitution of the public press to the basest and most deceptive class of advertisements. Ask the proprietors of any respectable newspaper, whether secular or religious, if they have the slightest confidence in the pretensions set forth in the medical advertisements that help to fill its columns, and they will tell you promptly no; and freely admit that, as a general rule, they are simply lying and deceptive statements, designed to deceive the credulous and afflicted, for the sole purpose of bringing money to the pockets of their authors—in other words, a plausible mode of obtaining money under false pretences. And yet they attempt to screen themselves from all responsibility, under the plea that the statements are in the form of advertisements. However true such a plea may be in law, it certainly is not good in morals. For the confidence that a large proportion of newspaper readers place in the advertisements, is in direct ratio to the confidence they have in the reading matter of the paper generally, and in the intelligence of those who edit and publish it. Thus, you ask almost any one who has been spending his money for this or that *panacea*, why they were so foolish, and they will tell you promptly they saw it advertised and recommended in their own favorite newspaper, and they thought there must

be some virtue in it, or it would not have been put into the *Tribune*, the *Times*, the New York *Independent*, or the *Christian Advocate*, as the case may be, thereby showing that the character of the paper has a direct influence on the confidence given to its advertisements. And there is no good reason why the editors and proprietors of a paper should not be held as rigidly responsible for the character of its advertisements, as for that of its editorials.

Sulphuric Ether versus Chloroform. By F. D. Lente, M.D., Cold Spring, N. Y.

Is it justifiable to use a remedy which has undeniably killed its hundreds, when we have an equally efficient one, with ordinary care, perfectly safe?

This is a question which should force itself upon the attention of every medical man who has occasion to use anæsthetics in surgery; it is a question of vital interest to his science and to his patients; it is a question which, I presume, any man would unhesitatingly answer in the negative; and yet a majority, perhaps, of surgeons are still risking the lives of their patients with chloroform, when they have, in sulphuric ether, an agent which has been *proved* to be equally efficacious, and which is admitted to be almost, if not altogether, perfectly safe. The question as to its safety, and the statistics bearing on the point, may be found fully discussed in an article furnished by me to the April (1861) number of the *American Journal of the Medical Sciences*, and in the Report of the Committee of the "Boston Society for Medical Improvement," published soon after, and need not be again canvassed now. As regards the proofs of its efficacy, it is only necessary to point to the hospitals in this country, but especially in Italy, where no other anæsthetic is used, and where immunity from pain is as perfect as elsewhere. But especially would I beg attention again to the statistics of the Mill Creek Military Hospital, Fortress Monroe, published by me in the June 28 number of the *American Medical Times* for 1862. There the quantity administered was reckoned by drachms, not by ounces, and the time one to two minutes. These results were witnessed, with considerable astonishment, by many military surgeons, and by some of the ablest civil surgeons and physicians in the country, some of them by the late Surgeon-General of the Army. Therefore their authenticity cannot be questioned. I have subsequently, also, in the same Journal, published, from my private practice, equally success-

ful and not selected cases, duly authenticated by well known medical men. Therefore, this fact I regard as settled—that a patient may be brought under the influence of sulphuric ether as quickly as he can safely by chloroform, and with a quantity costing less, and weighing but little more than the requisite amount of the latter. The objection, then, sometimes raised by army surgeons, of increased trouble of transportation, is not tenable.

If any one doubts this fact, after referring to the statistics above alluded to, *I will agree to go to any hospital where a large number of operations are being performed, and demonstrate it to the satisfaction of the opponents of ether.* To be the humble means of preventing some of the sacrifice of life which is almost daily occurring from the use of chloroform in surgery, would warrant a much greater sacrifice of time and trouble than this.

The recently published report of the Royal Medical and Chirurgical Society of London, adverse to the employment of sulphuric ether, and the recent occurrence of so many additional cases of death from *chloroform poisoning*, have forcibly recalled my attention to this subject, and, at the risk of a charge of egotism, induced me to make the offer which I here repeat; in other words, that is, to guarantee to get a number of patients, in any hospital, under full anæthesia with sulphuric ether in as short a time as can safely be done with chloroform, and with a quantity not exceeding an average of two ounces and a half, the average time two minutes and a half. The average time and quantity would probably be less in the ordinary run of hospital cases, (not more than half as much in cases of considerable debility, and after hemorrhage or insufficient nourishment, as in many cases in military surgery.)

I close this article by quoting the "remarks" appended to a fatal case of chloroform poisoning, published in the last number of the *American Journal of Medical Science*, and by referring to another case of recent occurrence, not yet published in a medical journal, that I am aware of. "*Remarks.*—This case presents several points of interest. The drug was administered by a medical officer, five others being present, and it is unnecessary to say that due care was observed to guard against accident. Only a few weeks before, the anæsthetic had been given to the same individual in a much larger quantity, a fact which, in connection with the absence of visceral lesions, proves that there was nothing to contra-indicate the employment of the agent." These "remarks" are but a repetition of what we re-

mark in every similar case, namely, that due care has been used, and that no human skill can enable us to foresee or prevent the dangers of chloroform. Can further comment be necessary? A former patient of mine, a young and gallant Colonel of one of our regiments, died recently in a neighboring village, of chloroform, administered, I believe, for the performance of some trifling operation.

The above is copied from the original department of the New York *Medical Journal*, for the purpose of fixing the attention of our readers, more fully, on the dangers attending the administration of chloroform, and of anesthetics generally. That the whole number of deaths induced by the use use of chloroform, directly, is very large, no one can deny. That many of these deaths have occurred without any fault in the time or mode of administering the agent, is equally certain; and, hence it cannot be truthfully said that its inhalation is actually free from danger in any single case. Its remote effects on the plasticity of the blood, and the properties of the solids, is also worthy of careful and thorough investigation. We strongly suspect that future investigations will show that the very general use of chloroform in surgical practice is far from having been an unalloyed boon to the human race. But, while we freely admit the dangers arising from the use of chloroform, is it true that sulphuric ether is actually *free* from danger, and can therefore be administered with impunity? That its inhalation is much less dangerous than chloroform, has been clearly shown by the statistics of the past. But that it is actually free from liability to produce fatal results, as would be inferred from the statements of Dr. LENTE, and others, we do not believe. Indeed, if ether could be at once substituted for chloroform, and thereby used by the same number and variety of patients, we do not believe ninety days would elapse without developing some fatal results. This opinion is founded partly on facts in relation to the effects of ether in several cases, in which it was administered by surgeens of much experience and skill, but in which respiration was so uniformly and completely suspended before sensibility was overcome, that the attempts at anesthesia had to be abandoned; and partly on the known relations of the different parts

of the nervous system to each other. The practicability and safety of anesthesia, by any agent whatever, depend on the physiological facts that the nervous centres of ordinary sensation and voluntary motion are separate from those of respiration and circulation, and that the functions of the first are capable of being suspended by the inhalation of certain agents, without simultaneously suspending those of the latter also. The safety of the inhalation in any given case, depends on the order, as to time, in which the two sets of nervous centres are influenced by the agent used, and the skill of the operator in keeping the effect from extending beyond the centres controlling ordinary sensation and motion. Experience has shown that, in the best majority of individuals of both sexes, and all ages, chloroform, ether, and nitrous oxide, all affect the nervous centres of sensation, voluntary motion, and mental action, before materially influencing those of respiration, circulation, &c.; but it has equally shown that in a small percentage of the whole number, the reverse happens, and the excito-motory or involuntary centres are first influenced by the anesthetic. And this is, undoubtedly, the cause of most of the sudden and unexpectedly fatal results.

That chloroform is more apt to extend its influence to the excito-motory centres than ether, or nitrous oxide, and therefore much more dangerous, we have no doubt. But that the latter agents are absolutely safe, as represented by some, we do not believe. The whole subject of anesthetics and anesthesia, requires further investigation, in connection with the physiological relations of different portions of the nervous system to each other.

Illinois State Medical Society.—The following is the list of Committees expected to report at the Annual Meeting of the State Medical Society, to be held in Bloomington, on the fir Tuesday in May, 1865:—

Committee on Practical Medicine and Epidemics: J. Adams Allen, M.D., of Chicago; C. Goodbrake, M.D., of Clinton; H. Noble, M.D., of Hayworth.

Committee on Surgery: D. W. Young, M.D., of Aurora; A.

L. McArthur, M.D., of Joliet; L. T. Hewins, M.D., of Oak Alla.

Committee on Obstetrics: W. H. Byford, M.D., of Chicago; Lucius Clark, M.D., of Rockford; S. T. Trowbridge, M.D., of Decatur.

Committee on Drugs and Medicines: John Bartlett, M.D., of Chicago; F. R. Payne, M.D., of Marshall; T. D. Fitch, M.D., of Chicago.

Committee on Ophthalmology: E. L. Holmes, M.D., of Chicago; R. E. McVey, M.D., of Waverly; J. S. Whitmire, M.D., of Metamora; F. B. Haller, M.D., of Vandalia.

Committee on Spotted Fever: J. S. Jewell, M.D., of Chicago.

Committee on Orthopœdic Surgery: David Prince, M.D., of Jacksonville.

The Committee of Arrangements and the Profession in Bloomington are preparing to give the Society a cordial reception, and we trust the coming meeting will be larger and more profitable than any that have preceded it. We hope the committees will have their reports fully prepared.

American Medical Association.—The American Medical Association will hold its Sixteenth Annual Meeting in the City of Boston, on Tuesday, June 6th, 1865.

The following Committees are expected to report:—

On Insanity—Dr. H. R. Storer, Mass., Chairman.

On Exsection and its connection with Conservative Surgery—Dr. Lewis A. Sayres, N. Y., Chairman.

On Drainage and Sewerage of Large Cities, and their Influence on Public Health—Dr. W. J. C. Duhamel, D. C., Chairman.

On Alcohol and its Relations to Man—Dr. G. E. Morgan, Maryland, Chairman.

On Quarantine—Dr. Wilson Jewell, Penn., Chairman.

On Medical Ethics—Dr. John A. Murphy, Ohio, Chairman.

On the Microscope—Dr. James M. Corse, Penn., Chairman.

On the Relations which Electricity sustains to the Causes of Disease—Dr. Squire Littell, Penn., Chairman.

On the Morbid and Therapeutic Effects of Mental and Moral Influences—Dr. A. B. Palmer, Mich., Chairman.

On the Causes of the Extinction of the Aboriginal Races of America—Dr. Geo. V. Suckley, Md., Chairman.

On the Causes and Treatment of Ununited Fractures—Dr. Frank H. Hamilton, N. Y., Chairman.

On Diphtheria—Dr. Lucius Clark, Ill., Chairman.

On the Uses and Abuses of Pessaries—Dr. James P. White, N. Y., Chairman.

On International Medical Ethics—Dr. J. Baxter Upham, Mass., Chairman.

On Climatology and Epidemic Diseases—Dr. C. W. Parsons, R. I., Chairman.

On Autopsies in Relation to Medical Jurisprudence—Dr. T. C. Finnell, N. Y., Chairman.

On so-called Spotted Fever—Dr. James J. Levick, Penn., Chairman.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Dr. A. Nelson Bell, N. Y., Chairman.

On Patent Rights and Medical Men—Dr. David Prince, Ill., Chairman.

On Revision of Plan of Organization—Dr. N. S. Davis, Ill., Chairman.

On Specialists—Dr. J. Homberger, N. Y., Chairman.

On Compulsory Vaccination—Dr. A. N. Bell, N. Y., Chairman.

On Rank of Medical Corps in the Army—Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy—Dr. T. L. Smith, N. Y., Chairman.

WM. B. ATKINSON, *Permanent Secretary.*

Practical Items.—The following paragraphs are copied from the proceedings of the Kings Co. Medical Society, as published in the *Buffalo Medical and Surgical Journal*, for March, 1865:—

Specimen of Entozoa.—Dr. Spier presented an interesting specimen of entozoa, taken from the right side of the heart of a dog. In the evening, the animal was in perfect health, but on the following morning was found dead. On opening the heart these *worms* were found (dead) in the right ventricle.

In reply to a question, the doctor stated that he had never found these animals in the human heart, but had discovered them in the kidneys. In this ventricle two were found, besides a clot of blood. The question here recurred, how did they get into the ventricle?

Dr. Enos looked upon it as a very interesting subject, and well worthy of being thoroughly sifted.

Pyemia.—Dr. Spier also presented a specimen of pyemia. The subject was a man who recently died in the Brooklyn City

Hospital. He had been operated upon a short time previously for a compound fracture of the leg. Gangrene set in, in the stump, and the man died. On *post mortem*, found the blood-vessels, especially the superficial veins, distended with air. The blood was also *oily*, which seemed under the microscope to be principally *margarine*. The liver was waxy, but the other organs of the body appeared to be healthy. Air was also found in the cephalic vein.

Therapeutics.—Dr. C. L. Mitchell called attention to his recent experience in the effects of certain remedies.

1.—Quinine, which for the last year he had found remarkably beneficial in allaying bronchial irritation, especially in children. He has used it in some cases of almost incessant cough, and had found it successful, after the failure of all the more usual anodyne expectorant remedies. In the bronchial irritation of pneumonia he had found it equally effectual and reliable. He cited the case of a child, aged 11, with excessive bronchial irritation, causing almost incessant cough, following measles. Skin dry, pulse 120, anorexia, and extreme feebleness. A grain of quinine every two hours, was followed by immediately beneficial effects, and a speedy recovery.

A case of hay asthma was last year much benefited, and this year wholly overcome by the use of quinine. He also alluded to the good effects of quinine in infantile convulsions, previously reported; and to its almost specific effects in neuralgia, especially in cases of miasmatic origin. He had recently had a most inveterate case, that had resisted other remedies, to whom he prescribed three grains every two or three hours, subsequently five grains, and finally ten every hour, which effectually subdued the disease, without any very unpleasant effects. There was a little tinnitus aurium, and decided sedative effects —lessened frequency of the pulse—and quiet sleep, of which the patient was in great need.

Dr. McClellan's experiences in the use of quinine, for the last year or two, confirmed that of Dr. Mitchell. He frequently prescribed it in bronchial irritation following measles or other causes, and considered it a remedy of great value in such cases. He had recently used it in two cases of children, with persistent barking cough, with perfect relief. In these cases he prescribed two grains four times a day.

Turpentine in Chorea.—Dr. Crane asked the experience of the members, in regard to the use of *turpentine in the treatment of chorea.*

Dr. McClellan related two cases which he had treated with turpentine, since hearing it spoken of by Dr. Crane. The first case was of two years' duration, in a child six years of age; turpentine was at first given in cathartic doses with marked benefit, and afterwards fifteen drops three times a day for a fortnight, when the chorea ceased. The second case came under his observation one month ago—was treated with small doses of turpentine with same result.

Dr. Crane reported a case of strongly marked chorea, a girl aged 10; this was an acute case. The patient was first treated with mercurial cathartics, and carb. ferri. She grew worse and worse, becoming idiotic, with loss of the power of locomotion and articulation, and the irregular motions persisted during sleep. He then gave two teaspoonfuls of turpentine on account of the mother's suspicion of worms. No worms were passed, but the patient's symptoms were relieved, and three days after the dose was repeated, with the same results. This was continued twice a week with marked benefit, for a month or six weeks, when the child was completely relieved, and there has been no recurrence of the disease.

Removal of foreign bodies from the Nostrils.—Dr. Enos exhibited a bean which was removed from the nose of a child about five years of age. He did so for the purpose of speaking of a simple mode of removing foreign bodies from the nostrils—a mode which, though not mentioned in the books, he has found very easy and efficacious. He would call it the blowing process. The manner is this: the child being in an upright position, place your mouth upon the *open* mouth of the child, and while with one finger you strongly compress the unobstructed nostril, blow somewhat forcibly and repeatedly, till the foreign body is forced out. The rationale of course is simple. When the air-passages of the child are filled, the column of air mounts over the velum into the nares, and impinges upon the posterior surface of the obstructing body, and forces it forward. Sometimes it will be forcibly ejected several yards.

The Larynx of the Negro. By George D. Gibb, M.D., &c. (Read before the meeting of the British Association for the Advancement of Science, September, 1864.)

The author's paper was upon the special difference between the larynx of the negro and the white man. After describing the larynx of the latter, he remarked that the essential point of difference between the two consisted in the invariable presence

of the cartilages of Wrisberg, the oblique or shelving position of the true vocal cords, and the pendent position of the ventricles of Morgagni. Any one familiar, said the author, with the dissection or examination of the larynx in ourselves, cannot but perceive that these peculiarities are not observable, unless we will admit the occasional presence of the first in certain windpipes. Now, we may be told by some anatomists, that they have commonly seen these Wrisbergian bodies, and that they are not rare, but that sort of evidence counts for very little. These small bodies (the cartilages of Wrisberg) are either very minute and rudimentary, or wholly wanting in the white race, whilst they are large and well developed and always present in the black or colored races. It may be mentioned, also, that I have dissected them in monkeys, in whom, even the smallest species, they are relatively large in comparison to the size of their bodies; and, with the object of attracting attention to them in the quadrumana, I exhibited specimens before the Pathological Society of London, in March, 1861, three and a-half years ago. Those who argue that the black race are inferior to the white, and approach the quadrumana in some of their features, would naturally lay hold of what I have stated to prove the truth of this theory, especially as regards the Wrisbergian cartilages and the position of the ventricles. But I take the opportunity of declaring at once, that whatever views may be entertained by anthropologists respecting the position in the scale of being occupied by black and white, they are discarded from this communication.

Dr. Crisp remarked on this paper, that even if Dr. Gibb was right, and these cartilages pointed out existed, it was no proof of the degradation of the Negro. Extraordinary statements had been made on this subject. It might be that these particular cartilages were given to the Negro just the same as a black skin was given him, and thus did not imply the least degradation.

Mr. Carter Blake called attention to the statement of the late Prof. Eschricht, who found the cricothyroid muscles very large in the Negro, a portion of their fibres ascending to the internal surface of the thyroid cartilage. M. Pruner-Bey had suggested that this might be a trace of the internal cricothyroid muscles of the *hylobates*. Perhaps Dr. Gibb would offer some opinion on this hypothesis?

In reply to questions from the Rev. Dr. Macauley and Dr. Heaton, Dr. Gibb said that he had examined the larynxes of 100 white men and 58 blacks, and he had in every case found

sufficient distinction to warrant him in introducing the subject to the notice of the Association.—*Anthropological Review, Nov.*, 1864, p. 322.

We commend this subject to the attention of American anatomists and anthropologists. In no other country in the world are there so many facilities for settling the point raised by Dr. Gibb as in our own, and we trust the matter will not be allowed to remain long in dispute.—*N. Y. Med. Jour.*

REPORT OF THE WEIGHTS AND MEASURES USED IN PHARMACY.

By Mr. BARNARD S. PROCTOR.

[*Abstract.*]

"The author first made a comparison of the apothecaries' weights of our country with those of other civilized nations. Though there are forty different European pounds and as many ounces in general use, there were only two or three systems of pharmaceutical weights, and these not widely differing from each other. The English system, though good in the abstract, had no simple relation to the systems of other countries, nor to the other weights and measures of this country. Some of its own members were in an anomalous position, What was a fluid pound of apothecaries' weight? Was it 12 avoirdupois ounces, 12 troy ounces, or 16 avoirdupois ounces? A critical examination was then made of several suggested alterations in the weights and measures of pharmacy, those of Mr. Jacob Bell, Mr. Griffin, Dr. C. Wilson, and Mr. Warington, being especially noticed. The advantages and disadvantages of the weights and measures authorized by the Medical Council in the new Pharmacopœia were next reviewed, and a suggestion made that the ounce of that system should be divided into drachms and scruples. To get rid of the fractions of a grain, which would otherwise be appended to these drachms and scruples, the author proposed that the value of the grain should be slightly increased; so that, instead of 18·229 grains being contained in one scruple, there should be only 18; instead of 54·687 in the drachm, there should be but 54; and 432 in the ounce, instead of, as now, 437·5. This was as near an approach to an amalgamation of the troy and apothecaries' system as he could devise. The elaborate and ambitious system proposed by the American Pharmaceutical Association was next noticed, and then the French metrical system, the merits and demerits of all under various circumstances

being carefully weighed. For ultimate general adoption, the author thought the American octonary system to be superior to the metric decimal system; that, in short, doubling and halving a number was better than multiplying or dividing by ten. He concluded by proposing the use of the American system, modified to meet the requirements and customs of the English."—*Proc. Brit. Phar. Conf.*

The Black Troops of the British Army and Consumption.—There are some thousands of black troops in the service of the Crown. In Ceylon, the mortality is much lower among the native than among the white troops; but in the West Indies, where also there are both black and white, it is very decidedly otherwise. In Jamaica, the mortality among the black troops was 30.25 per 1000 of mean strength; among the white troops only 12.81. Mr. O'Flaherty, the principal medical officer in that command, remarks that the black soldier to outward view is apparently strong and muscular, but when sick, he has comparatively little power of resisting or sustaining disease, and fatal cases of consumption are seldom protracted to the advanced stages commonly observed among European soldiers. It must be borne in mind that the black recruit undergoes a very trying change, on enlisting, from almost complete idleness, and a semi-savage state of existence, to a life of order, regularity, and continued exertion in learning his work during the first two years; the white corps brings no soldiers in the recruit stage. In Jamaica, also, the black troops have much heavier duty than the white, and have been provided with only two meals a day, at 8 A.M., and at noon, leaving them for nearly twenty hours without any regularly provided sustenance: but the medical officer had recommended the addition of an evening meal. The liability of the black troops to consumption is remarkable, also, in the returns for West Africa. At the Gambia, the deaths from consumption and diseases of the lungs, in the four years, 1859–62, were as many as 17.64 per 1000 *per annum.* The mortality from all causes in the year 1862, exceeded 28 per 1000 at Sierra Leone, the Gold Coast, and Lagos; there are no European troops there to allow of a comparison of mortality.—*Brit. Med. Jour., Oct.* 29, 1865.

The increased experience of our own Army Medical Officers, has led them to opinions which are in accordance with those expressed in the foregoing article. The negro has not the ability to resist morbific influences which is possessed by the European, unless it is in the simple matter of malarious diseases,

and even in this, there is room for doubt. The medical officers having charge of the negroes liberated by our armies on the lower Mississippi, unite in the opinion that they are not in the least exempt from the action of malarial poison, and the writer saw for himself that such is the case. Undoubtedly, however, a great deal of the sickness and mortality which prevailed among the blacks a year ago, in the localities referred to, was due to the entire neglect by those in power of the recommendations of the medical authorities, relative to food, clothing, and other matters affecting their hygienic condition.—*N. Y. Med. Jour.*

On the Internal Employment of Essence of Turpentine in the Headaches of Nervous Women.—M. Teissier thus describes the kind of cases of nervous headache in which he has found the essence of turpentine to be beneficial. The affection, he says, is a common, but often very severe one, and should not be confounded with ordinary neuralgia, either periodic or irregular, of the face or cranium, or even with hemicrania. This cephalæ is characterized by a much more fixed and continuous pain in the head, and may last not only several weeks, but months and entire years, without presenting more than rare and slight intermissions. The pain is sometimes dull, sometimes shooting, and sometimes pulsative, occupying only a single point of the head or the whole of the cranium, being accompanied by nausea or even vomiting, and complicated besides with much more serious symptoms, such as vertigo, and tendency to syncope, inability to think or to work, despondency, weariness of life, and, sometimes, numbness in the limbs. It is especially observed in nervous women, with exalted sensibility, of a delicate constitution, somewhat anæmic, and especially hysterical. It often co-exists with dysmenorrhœa, amenorrhœa, and also with a tendency to excessive menstruation, although it is sometimes observed in persons of good constitution whose menses are regular. M. Teissier observes that many remedies already exist which are efficacious in this complaint, such as valerian, assafœtida, the ethers, cyanide of potassium, aconite, &c.; and more particularly those which improve the blood, as chalybeate medicines, and different mineral waters. But these means sometimes fail, and then the essence of turpentine may be employed with advantage; although M. Teissier does not assert that it is infallible in its operation. It has been employed in the same kind of cases by Dr. Graves, and by Trousseau; but M. Teissier does not think it necessary to prescribe it in such

large doses as those physicians have done. He recommends its use in capsules, given at meal-times, each capsule containing eight drops of the essence.—*Gazette Medical de Lyon, and Brit. & For. Med.-Chir. Rev.*

Substitutes for Indian Ink.—A substance much of the same nature and applicable to the same purposes as Indian ink may be formed in the following manner:—Take of isinglass three ounces; make it into a size by dissolving over the fire in six ounces of soft water. Take then Spanish liquorice one ounce, dissolve it in two ounces of soft water over the fire in another vessel, then grind up on a slab with a heavy muller one ounce of ivory black with the Spanish liquorice mixture. Then add the same to the isinglass size while hot, and stir well together till thoroughly incorporated. Evaporate away the water, and then cast the remaining composition into a leaden mould slightly oiled, or make it up in any other convenient way. This composition will be found quite as good as the genuine article. The isinglass size mixed with the colors work well with the brush. The liquorice renders it easily dissolvable, on the rubbing up, with water, to which the isinglass alone would be somewhat reluctant; it also prevents it cracking and peeling off from the ground on which it is laid. A good Indian ink may be made from the fine soot from the flame of a lamp or candle received and collected by holding a plate over it. Mix this with the size of parchment, and it will be found to give a good deep color. Burnt rice has been by some considered a principal ingredient in the genuine Indian ink, with the addition of perfumes or other substances not essential to its qualities as an ink. —*Chemical News*, from *British Journal of Photography.*

Physiological Effects of Digitalis.—Dr. M. Galan presented to the Academy of Medicine in Havana, Cuba, a Memoir "on the Physiological Effects of Digitalis." From repeated experiments conducted by M. Martin-Magron, of Paris, Dr. Galan concludes that—

1st. Digitalis accelerates the pulse only transiently, and previous to the constant lessening which it produces on its action. 2d. This effect does not take place if the heart beats normally slow. 3d. Digitalis, like digitaline, as observed by Vulpian, causes a change in the shape of the heart. 4th. It diminishes the treating, both in organic and nervous affections of the heart. 5th. Hypertrophy is, of all affections of the heart, the most obstinate to the action of digitalis. 6th. This substance diminishes the

calibre of the bloodvessels. 7th. It excites, instead of depressing, the cerebral functions. 8th. It very seldom determines convulsions attended with spinal paralysis. 9th. Digitaline may rationally be employed in several diseases: convulsions, epilepsy, spermatorrhœa, and specially in tetanus, in preference to woovara, which otherwise acts on the nerves, and excites the spinal cord, as proved by C. Bernard.—*Annals de la Real Academia de Ciencias Medicas, Fisicas y Naturales de la Habana. Dec.* 15, 1854.

Mortality of Chicago for the month of March 1865, as compiled from the report of the Health Officer:—

DISEASES.

Accidents and Injuries,	7	Old Age,	9
Bronchitis,	5	Paralysis,	3
Cancer of Stomach,	3	Pneumonia,	27
Childbirth,	7	Remittent Fever,	1
Cholera Infantum and Diarrhœa,	8	Rubeola (Measles),	1
Consumption,	30	Scarlet Fever,	10
Convulsions,	27	Scrofula,	2
Croup or Laryngitis,	22	Small-Pox,	16
Diphtheria,	15	Spotted Fever or Cerebro-Spinal Meningitis,	5
Disease of the Heart,	5	Stillborn,	18
Dropsy,	6	Typhoid and Typhus Fever,	10
Dysentery,	2	Unknown,	9
Erysipelas,	3	Whooping-Cough,	2
Inflammation of Brain,	16		
Inflammation of Kidneys,	1	Total,	279
Inflammation of Liver,	3		
Inflammation of Stomach & Bowels	7		

Ages of the Deceased.—Under 5 years, 126; over 5 and under 10 years, 16; over 10 and under 20, 15; over 20 and under 30, 24; over 30 and under 40, 27; over 40 and under 50, 20; over 50 and under 60, 11; over 60 and under 70, 12; over 70 andunder 80, 4; over 80 and under 90, 3; stillborn, 18; unknown, 3. Total, 279.

The whole number of deaths for the same month, in the year 1864, was 345.

Foreign Medical Intelligence.—Dr. Jonas Quain, author of Quain's Anatomy, died on the 31st of January, in London, at the age of 70 years.

There are 18,000 practitioners of medicine in France, at the present time.

We are sorry to announce the recent death of the eminent English geologist, Dr. Hugh Falconer. He has been engaged, for the last few years, in investigating the bone-deposits in caves.

Dr. Livingston is planning a new journey across the African continent.

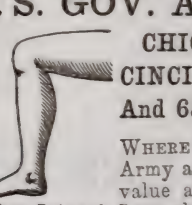
The amount of absinthe drunk in Paris may be estimated in part by the fact that Switzerland alone sent 7,500,000 gallons thither last year.

The grand prize of 5000 francs has been adjudged, by the Académie des Sciences of Paris, to M. Roussell for his History of Pelagra; and, among others, one of 2500 francs to M. Zenker for his investigations on Trichiniasis. The grand prize in surgery, for 1866, of 20,000 francs, has for its subject, "The Preservation of the Limbs by the Preservation of the Periosteum."

DEMAND FOR PHYSICIANS.—The Medical Director of Philadelphia has received an order for twenty-six contract physicians to fill the vacancies in the Twenty-fifth Army Corps. If their services should prove satisfactory at the end of their three months' contract, they will be commissioned as assistant-surgeons without an examination. The new office of the Medical Director is at the N.E. corner of Broad and Spruce Streets.

ARTIFICIAL LEGS FOR SOLDIERS.

U. S. GOV. ARTIFICIAL LEG DEPOTS:



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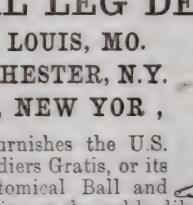

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DOUGLAS BLY, M.D., *U.S. Commissioner.*

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DR. MOTT ON ARTIFICIAL LEGS.

NEW YORK, FEBRUARY 10, 1866.

When the Palmer leg was invented. I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

FIRST. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

SECOND. The ankle-joint is constructed without iron. steel. or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

THIRD. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable. and under the control of the wearer.

FOURTH. The springs are made of India-rubber, and imitate more closely the action of the muscles.

FIFTH. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

OF THE

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ARTICLE XII.

PROTECTION FROM SMALL-POX BY MEANS OF VACCINATION AND RE-VACCINATION.

At the annual session of the American Medical Association, held in New York, June, 1864, the following resolutions were adopted, and the undersigned appointed a Committee to carry them out:—

"Resolved, That the Association deems it a duty to institute measures looking to the vaccination, ultimately, of every person living in the limits of country over which it exercises influence.

"Resolved, That a Central Committee of five be appointed to enlighten the public mind, by all available means, upon the value and necessity of universal vaccination.

"Resolved, That the Central Committee be authorized to appoint associate and auxiliary committees in each State."

According to the most reliable statistics obtainable, the annual death-rate of the United States is about one in forty-five of the whole population, or about 600,000 annually for the last ten years. Of this number of deaths from all causes, about one in every two hundred and fifty, or in round numbers, not less than 2,500 die annually of small-pox. This mortality, estimated by the usual ratio of deaths in small-pox, demon-

strates the existence of more than 10,000 cases of unmodified small-pox annually in the United States, exclusive of varioloid; all of which can be wholly prevented by effectual vaccination and *re*-vaccination. During the great epidemics of small-pox which prevailed in Europe during the early part of the present century, all observers had abundant opportunities for ascertaining the true value of vaccination. The vaccinated, and those who had previously had small-pox, were both found to be more or less subject to the disease. Early in the progress of these epidemics, however, an important fact became evident, namely, that there was a great difference in the mortality of small-pox when it attacked these three classes:—1. The vaccinated; 2. The variolated; and, 3. Those who had neither been vaccinated nor had small-pox. Of the first class, those who had been previously vaccinated, out of every 330 attacked, only 1 died. of the second class, those who had previously had small-pox, 1 out of every 50 died. While of the third class, those who had neither been vaccinated nor had small-pox, 1 out of every 4 died. Thus proving the great superiority of vaccination over small-pox itself, in protecting the system from the fatality of a second attack.

Unmodified small-pox is not only a very fatal disease, as proved by its frequently cutting off one-fourth of all whom it attacks, but its tendency is to develope any latent disease which may exist in the constitution, particularly scrofula, and it is thus, indirectly, the cause of death to a much larger portion of the human race than at first sight appears. It is not, therefore, surprising that small-pox, attacking for the second time an already enfeebled constitution, should cause a greater proportion of deaths than takes place when it occurs after vaccination, a much milder form of the same disease, and, therefore, proportionately less likely to develope any pre-existing constitutional affection.

It may, indeed, be truly said, that during the last sixty-four years, vaccination has not only prevented millions of cases of small-pox, but that it has also saved a multitude of persons from scrofula and other fatal maladies.

The human race has become stronger, has produced more hardy offspring;—not only suffering less from disease in general, but in all respects more capable of resisting it, through the instrumentality of vaccination.

Among the earliest objections urged against vaccination, even during the time of JENNER, was the alleged danger of communicating other diseases with the vaccinia. And from that day to this, cases of cutaneous disease, syphilis, scrofula, &c., have been occasionally attributed to this cause. But if it were now possible to collect all such cases, even then, their utter insignificance when compared with the multitude that have unknowingly been vaccinated with lymph taken from diseased persons, without contamination, is such, that this evidence alone against the transmissibility of other diseases by vaccination, would be sufficient to establish the conclusion as a general rule, that *there is no danger of communicating other diseases with vaccinia.* This conclusion is in keeping with the recorded experience of HEIM, RICORD, BOSQUET, TAUPIN, LANDOURY, FRIEDINGER, and many others, who have investigated the subject, and may, indeed, be regarded as an accepted truth by the most distinguished men of the medical profession.

The recorded facts, the arguments, and deductions made by investigators in reference to the possibility of transmitting other diseases with vaccinia, added to the facts positive and negative which have presented under our own observation, not only confirm our belief in the non-transmissibility of other diseases with the vaccinia *as a general law*, but demonstrate that vaccination, besides preventing small-pox, frequently fortifies the constitution of the individual against some of the worst of those very diseases which are erroneously alleged to be transmitted by it. We would not, however, be understood as approving of the use of vaccine virus obtained from diseased persons; but on the contrary—*none should ever be used knowingly, except that which has been obtained from perfectly healthy subjects.*

The protective powers of vaccination are most evident in their results to mankind in general. The comparative exemption of all civilized communities, for the last forty years, from

the most terrible scourge to which mankind was ever liable, is an evidence of the protection afforded by vaccination so overwhelming as to characterize the discovery of JENNER as the greatest boon ever conferred upon the temporal welfare of man.

In England alone, for nearly a century before the introduction of vaccination, no fewer than 30,000 persons were annually cut off by small-pox; which, in the same ratio, according to the present population, would be equivalent to 100,000 deaths annually. Out of every 1,000 deaths, from 1750 to 1800, there were by small-pox 96; from 1800 to 1850, there were, for the same number, but 35.

In Germany, for the same periods of time, there were, out of every 1,000 deaths for the former period, by small-pox 66.5; for the latter period, 7.26.

In Sweden, for the last twenty-eight years before the introduction of vaccination, out of each million of the population there were 2050 deaths annually by small-pox; for forty years subsequent to the introduction of vaccination, the number of deaths annually by small-pox, per million of inhabitants, was 158.

In Westphalia, from 1776 to 1780, the annual small-pox death-rate per million of inhabitants, was 2643. From 1816 to 1850, it was 114.

In Copenhagen, 1751 to 1800, the annual rate per million was 3128; from 1800 to 1850, it was 286. In Berlin, for the same periods, the rates relatively were 3442, and 176.

American statistics, so far as known, are equally conclusive. According to a paper read by Dr. ROBERT WARE, before the Boston Sanitary Association, we learn that in Boston, in 1721, the year in which inoculation was introduced, and when the whole population was 11,000, 5759, or more than one-half had small-pox, and of these, 844 died. In 1730, there were 4000 cases and 200 deaths. In 1752, when the population was 15,-684, there were 5545 cases, and 539 deaths. In 1764, there were 5646 cases; in 1776, 5292; and in 1792, 8346. Compared with a subsequent period, after the general introduction of vaccination, and when it was in a measure compulsory, from

1815 to 1830, the mortality from small-pox was only *fourteen;* from 1811 to 1839, it was but *fifty-two.*

By an approximate average death-rate by small-pox per million of living population, from 1750 to 1800, and from 1800 to 1850, in various countries (collected by the Epidemiological Society of London), there were, in the former period, nearly twenty times as many deaths by small-pox as there were in the latter. And besides, "one obviously beneficial result of vaccination, as regards its protective influence on the multitude, has not, we think, been appreciated or illustrated with sufficient force; namely, that the epidemic influence of small-pox greatly increased during the practice of inoculation, and greatly decreased since vaccination has been adopted. Dr. HEBRA, Professor of Diseases of the Skin, at Vienna, incidentally remarks and simply alludes to the fact, that 'Epidemics of small-pox have been more rare, and are less malignant, since the introduction of vaccination.' But definite material for the following statements are to be found in the report of the Epidemiological Society, in illustration of our remarks:—(1.) During 91 years previous to *inoculation*, there were 65 distinct and well-marked epidemics, which is a ratio of 71.4 epidemics in 100 years. (2.) During 63 years, in which *inoculation* was practiced, and that to a great extent, there were 53 distinct and well-marked epidemics,which is a ratio of 84 epidemics in 100 years. (3.) During the last 50 years, in which vaccination has been practiced, and inoculation been declared illegal, there have been 12 epidemics of small-pox, which is a ratio of 24 epidemics in 100 years."*

According to the well kept mortality statistics of Sweden, the *annual* small-pox death-rate in that country, during the period of 1841–50, averaged less than the *weekly* death-rate from small-pox and measles during the period of 1755–75. This important fact introduces us to an indirect benefit of vaccination, which has, until recently, been overlooked, namely, the beneficial influence of vaccination against other diseases. Drs. GREENHOW and FARR, under the auspices of the General Board of Health of London, have shown that with the decline of small-

* Medico-Chir. Review, October, 1857.

pox consequent on vaccination, the general death-rate has greatly diminished from all causes; and that too, notwithstanding a severe and fatal epidemic of influenza and two epidemics of cholera; and under this diminution, it is especially notable that the two classes of disease usually considered the most fatal, namely, scrofulous and low febrile affections, have diminished in a remarkable degree. The general death-rate per 10,000 of living population, during the periods of 1846–55, was 25 per cent. less than the decennial period of 1746–55; and 40 per cent. less than the decennial period of 1681–90, showing a successive decline since the remoter period, from 421 to 355; and since the more recent period, from 355 to 249.

According to Dr. FARR'S statistics, the average annual death-rates in London, from all causes and all ages, per 10,000 living were:—

From 1771–80	500
1801–10	292
1831–35 (small-pox prevailed)	320
1840–54	$248\frac{9}{10}$

The average annual death-rates in Sweden, from all causes and all ages, per 10,000 living were:—

From 1776–95	268
1821–40	233
1841–50	205

In McCulloch's Descriptive and Statistical Account of the British Empire, Dr. FARR has shown that fever has progressively subsided since 1771, (at first under the influence of innoculation); "and that *the combined mortality of small-pox, measles, and scarlatina is now only half as great as the mortality formerly occasioned by small-pox alone.*"

According to the researches of Dr. GREENHOW, previous to the introduction of vaccination, the death-rate from scrofulous diseases was five times greater than it is at the present time; and the present death-rate of pulmonary consumption, great as is, is seven per cent. lower than it was previous to the discovery of JENNER.

M. Bousquet,* in his detail of the epidemic which prevailed at Marseilles, in 1825, states that the whole population was estimated at 40,000. Of these, 30,000 had been vaccinated; 2000 had had small-pox, 8000 had neither been vaccinated nor had small-pox. Of the 30,000 vaccinated, 2000 were seized with small-pox; 20 of whom, or one for every hundred affected, died. Of the 2000 who had before had small-pox, either naturally or by inoculation, 20 were attacked, and of these 4 died, or one for every five who took the disease. Of the 8000 who had not been vaccinated nor had small-pox, 4000 contracted it, and 1000 died, or one in every four. By this it appears that *one-half* of the non-vaccinated, *one-fifteenth* of the vaccinated, and *one one-hundreth* of the variolated took the disease. But such was the difference in the comparative mortality of the attack in the vaccinated and the variolated, that while the variolated part of the population were cut off in the proportion of *one* out of every 500, the vaccinated only lost *one* out of every 1,500; or, in other words, of an equal number of variolated and vaccinated cases, *three* of the variolated died from the second attack, for every *one* that died who had been previously vaccinated.

Re-Vaccination.—Several governments, confident in the anti-variolous power of vaccination, and profiting by the experince gained, determined upon re-vaccination as the most likely means of getting rid of the epidemics which were desolating their armies. The effect was so salutary as to have finally banished small-pox from among them. But this was not the only benefit. Knowing, as we do, that small-pox and cow-pox are in reality the same disease, the latter being merely deprived of its virulence by having previously passed through the system of the cow, the results of these numerous re-vaccinations are of immense importance not only in confirming the identity of small-pox and cow-pox, but in establishing the no less important fact, that the protective power of small-pox itself wears out of the system in a certain proportion of cases, as life advances, in nearly the same ratio as that of cow-pox. Thus, in all these

* Traite de la Vaccine.

armies, a certain proportion of the men were found to have been previously vaccinated, while no inconsiderable proportion had passed through unmodified small-pox. Now, if we take the susceptibility to re-vaccination as a test of liability to varioloid or to a second attack of small-pox, we have these vaccinations proving the fact that after a certain number of years, the same proportion of those who have previously had small-pox become susceptible to a second attack, as those who have been vaccinated are to varioloid. So that once having passed through all the dangers of unmodified small-pox, the person, at the end of twenty years, for instance, has no better security against a second attack, than the person who has been vaccinated for a corresponding length of time.

In the Wurtemberg army, of 40,000 cases collected by Dr. HEIM, on re-vaccination it was found that in every 100 vaccinated after small-pox, 32 succeeded, 26 were modified, and 42 failed. In every 100 re-vaccinated 34 succeeded, 25 were modified, and 41 failed.

According to the Statistical Report of the Medical Department of the English Army, from Oct. 1858, to Dec. 1859, 32,510 soldiers and recruits were vaccinated. Of this number, 4124 bore marks of unmodified small-pox; 23,924 bore good marks of vaccination; 1901 bore doubtful marks of vaccination; and 2561, had no marks of either vaccination or small-pox.

By reducing these figures as nearly as possible to the same scale as those above given for the army of Wurtemberg, we find that of the 4124 who had previously had small-pox, on vaccination, 1473 or 35 per cent. succeeded; 799 or 19 per cent. took imperfectly; and 1842 or 44 per cent. failed. Of the 23,924 who had good marks of vaccination, on re-vaccination 8976 or 37 per cent. took perfectly; 5277 or 22 per cent. imperfectly; and 9671 or 40 per cent. failed. Of the 1901 with doubtful marks of vaccination, the number of good vesicles on re-vaccination was 777 or 40 per cent.; modified, 505 or 26 per cent.; and 616 or 32 per cent. failed. Of the 2561 who had no evidence of protection, on vaccination, 1362 or 53 per cent.

took; 484 or 18 per cent. had modified vesicles, and 715 or 23 per cent. failed.

In the Prussian Army, in 1860, 69,096 soldiers were vaccinated. Of this number 57,325 exhibited marks, more or less perfect, of previous vaccination, 7420 being distinct; 4151 showed no marks whatever. Of the whole number, 44,193 took; 8256 partially and 16,047 failed. These last were vaccinated again, when 5577 proved successful, and 11,650 failed. During the year, there occurred among those who had been unsuccessfully vaccinated and others who had been successfully vaccinated in former years, one case of varioloid, but no case of small-pox. Thus, during the year 1860, out of 69,096 vaccinations, 49,777 or 72 per cent. took. In the entire army, there occurred during the year 23 cases of varioloid, and 4 of small-pox. Of these cases, 14 of varioloid and 4 of small-pox occurred in persons who had not been re-vaccinated; 8 of varioloid, and 1 of small-pox, occurred among those in whom the re-vaccination failed; and the remaining 1 of varioloid, among those who had been re-vaccinated with success.

In the United States, re-vaccination has received but little attention. On the breaking out of small-pox among a crew of five hundred persons, on board a U.S. frigate, about twenty-five years ago, the late Dr. Samuel Jackson, Surgeon U.S.N., vaccinated the whole ship's company. One in six took. They had all been vaccinated or had had small-pox before. Those on whom vaccination failed, proved to be equally insusceptible to small-pox, which wholly ceased from the time the re-vaccinations took effect.

Of 686 recruits vaccinated by Dr. Forry, U.S. Army,* 560 had been vaccinated before, 74 had had small-pox, and 52 had not had small-pox nor been vaccinated. Of the 560 previously vaccinated, 381 exhibited good cicatrices; 134 imperfect, and 45 had no marks at all; 196 took, including 55 which were modified. Of these 196, 109 had been previously vaccinated before the age of five years; 48 between the ages of five and ten, and 39 subsequently to the latter age. Of the whole 560 pre-

* American Jour. Med. Sciences, April, 1842.

viously vaccinated, 316 were vaccinated before the age of five years; 133 between the ages of five and ten, and 111 after the latter period. Hence it follows, though not as an exact result, according to Dr. FORRY's limited experience, that as the ages of the great majority of these men ranged from twenty to thirty-three (the average being twenty-five), and as the ratio of successful re-vaccination is very nearly the same after each interval of age (being about one-third), the limit of the protective power of vaccination is not restricted to any precise number of years.

The only statistics of re-vaccination of the present army of the United States, we have been able to obtain, are the following, furnished by Dr. S. O. VANDERPOEL, Surgeon-General of New York, to the U.S. Sanitary Commission,* from the first returns made to him in accordance with a general order:—

Total number of recruits examined	9548
Bearing marks of previous vaccination	7765
Total vaccinated or re-vaccinated	8095
Found to be susceptible	2292
No. susceptible having marks of previous vaccination	1338

It is evident from the foregoing statistics, that no certain period of limitation can be fixed for the protective power of vaccination. It is certain, however, that its loss of power bears *some* proportion to the lapse of time, though it seems highly probable that this apparent loss of protective power is in the same ratio as the varying liability to small-pox, independent of vaccination. Dr. J. F. MARSON, the experienced superintendent of the small-pox and vaccination hospital in London, states that, "but few patients under ten years of age have been received with small-pox after vaccination. After ten years, the number begins to increase considerably, and the largest number admitted are for the decennial period from the age of fifteen to twenty-five, and although progressively diminishing, they continue rather large up to thirty, and from thirty to thirty-five they are nearly the same as from ten to fifteen; but as in the unprotected at this period of life, the mortality is doubled, showing the cause to be probably as much or more

* Sanitary Commission Report, E.

depending on age and its concomitants as on other circumstances. In still further advanced life, the ratio of mortality will be seen to increase also, as in the unprotected state."*

According to the statistics of Professors Heim, of Stuttgart, and Retzius, of Stockholm, and Dr. Marson, of London, the liability of small-pox is found to be, as regards age, very nearly the same as the increased susceptibility to a second vaccination, or, as will presently be seen, to a second attack of small-pox.

The occasional recurrence of unmodified small-pox a second time, or after a previous vaccination, does not invalidate the general law, that a person who has once been properly vaccinated, or has once had small-pox, in general remains protected against a subsequent attack. It is, however, a well established fact, that certain individuals who have had unmodified small-pox in infancy or youth, may, especially if frequently exposed to the epidemic influence of the disease, have it again in after life; and such attacks are always much more dangerous to life than small-pox after vaccination. All medical men of much experience have met with such cases. Dr. Thompson, of Edinburgh, in his own practice, met with 85 cases of second attack of unmodified small-pox; and Prof. Heim, 57. It is in vain, therefore, to expect that vaccination will give greater security to the person from a subsequent attack of small-pox than small-pox itself unmodified. All that can be reasonably asked is, that vaccination shall give as good security against a subsequent attack of small-pox as if the person had passed through small-pox itself; and this, if properly performed, and with good lymph, the accumulated evidence of the last sixty years most thoroughly proves. And with this immense superiority in favor of the protective power of vaccination over unmodified small-pox, namely:—that it is not contagious; does not endanger life; does not engender scrofulous disease; does not disfigure the countenance, nor cause deafness and blindness, and does not cut off one in every four to eight affected by it—with all of which small-pox is justly chargeable.

* Returns of Epidemiological Society, London.

By estimating the result of the foregoing statistics (chiefly obtained from the returns of the Epidemiological Society of London, and more might be furnished), embracing carefully recorded and reconcilable points of observation for nearly 200,000 cases, we are justified in accepting this experience as a safe criterion by which to base an estimate for any number of cases, great or small.

The conclusions elucidated from the data given, are:—

1. That vaccination is immensely protective against epidemic diseases generally, and against small-pox in particular; and against death by small-pox, the protective power of vaccination is almost perfect.

2. That of any number of persons who have had unmodified small-pox, the proportion wholly protected from a second attack at adult age, is 43 per cent., while 57 per cent. are liable to it again in some form or other.

3. That out of any number of adult persons who have good marks of vaccination, 40½ per cent. are perfectly protected; while 59½ per cent. are susceptible to varioloid, or to re-vaccination, to such a degree as to render their protection perfectly complete.

4. That the degree of protection afforded by previous unmodified small-pox, from a second attack, is only 2½ per cent. greater than the protection afforded by vaccination; a proportion too small to be regarded as any evidence of real difference in protective power, and reasonably attributable to spurious or impaired vaccination from a variety of causes, such as vaccination during the progress of other diseases, injury of the vesicle, or defective lymph.

5. That out of any number of adult persons with imperfect marks of vaccination, 23 per cent. only are protected, while 77 per cent. are liable to small-pox or varioloid.

6. The liability to varioloid after ten years of age, of persons vaccinated under three years of age; and the increased liability again from fifteen to twenty-five years of age, of persons vaccinated or re-vaccinated at from ten to fifteen years of age, demonstrates that, generally, protection by vaccination under

twenty-five years of age is complete for about seven years only. Subsequent to twenty-five years of age, protection is complete for a greater length of time, proportionate to the age of the individual at the time of the vaccination.

7. That during the prevalence of an epidemic of small-pox there is increased susceptibility to the disease, and the degree of protection from previous vaccination is proportionately lessened. Under such circumstances, therefore, it is incumbent to re-vaccinate at intervals not exceeding five years; and in cases of certain exposure, as soon as practicable thereafter, as there is abundant evidence of the protective power of vaccination and re-vaccination even as late as the fourth day after exposure to small-pox.

8. Protection is known to be complete only when fresh vaccine lymph from a perfect visicle fails to take on re-vaccination.

A. N. BELL, *Brooklyn, N. Y.*
J. P. LOINES, *New York.*
H. D. BULKLEY, *New York.*
A. NEBINGER, *Philadelphia.*
JAMES F. HIBBERD, *Richmond, Ind.*

ARTICLE XIII.

ENLARGEMENT OF THE PROSTATE.

By F. R. PAYNE, M.D., Marshall, Ill.

The prostate is not unfrequently enlarged by acute inflammation from virulent gonorrhœa, blows inflicted on the perineum, or the rough and improper use of the catheter. There are other causes capable of producing this disease. In acute inflammation of this gland the symptoms are positive, and with proper care in the examination it is readily detected. If true inflammation continues for any considerable time, we frequently have abscess of the gland. When this occurs, the prompt resort to the lancet or trocar is the most reliable hope for the prevention of urinary abscesses and recto-vesical fistula. We some-

times find chronic suppuration of this gland, and when this occurs there is much distress, and frequent discharge of mucopurulent urine. This can usually be detected by introducing the finger into the rectum. If a soft point is found slightly elevated, and, by pressing, matter escapes through the urethra, we are justifiable in plunging the lancet or trocar, and thus remove the pus, give immediate relief, and save the patient from the horrors of an offensive and troublesome fistula.

My object in writing this paper is to present to your readers a brief history of one case which recently occurred in this locality.

Mr. James C. Graham, aged 68 years, a farmer by occupation, a virtuous and respectable citizen, sent for me on the 23d day of March, 1865, and I found him laboring under the following symptoms:—Excessive pain in the back and urinary organs; complete suppression of urine, and extreme constipation, with almost a constant desire to evacuate the contents of the bowels and bladder; very restless and nervous; but very little arterial excitement; pulse intermittent; tongue coated with a brown fur; breath offensive; a fulness of the epigastrium; nausea, and occasional efforts at vomiting. For the last eight or ten years he has had great trouble in voiding urine, and four years ago he had an abscess, which was discharged through the rectum, relief immediately followed, without the troublesome effects of fistula. For several weeks previous to the time we saw him, he had suffered greatly with the symptoms above enumerated, but did not call the aid of a physician until after the complete suppression of urine. We visited him early in the morning, three miles in the country, and made an effort to introduce the catheter, no obstacle was encountered until the point of the instrument reached the upper portion of the prostate. After cautious, and more than ordinary perseverance, we failed to accomplish our object. I then made the following prescription:—

℞. Hydrg. Chld. Mit.---------- 50 grs.
Pulv. Opi.---------- 6 grs.
Pulv. Ipecac---------- 15 grs.

Mix, and make three powders. Ordered one every two hours; in five hours after last, if no operation, oil, or seidlitz; also, free use of the tea of buchu leaves.

Evening.—No operation from bowels or bladder. Another effort was made to introduce catheter, it seemed surely to pass into the organ, but only a few tablespoonfuls of thick, bloody matter was discharged, and that only when the patient made an effort to void urine. But little pain attended the operation. Ordered hip bath, laxatives, and rectal injections.

24*th.*—No fecal or urinary discharges; patient very restless, sick at stomach, and anxious expression of the countenance; pulse 90, and intermittent. Catheter again introduced, only resulting in the discharge of one or two ounces of bloody, thick material. We then passed a tube of stomach-pump up to sygmoid flexion, and through it large enemata were used. This did no good, the injections would pass out as though they were driven back with a force-pump. Fomentations were then ordered over the hypogastric region, sinapisms to spine, calomel and opium internally. If this failed, four drops of oleum tiglii every hour, in four doses.

25*th.*—Patient still not relieved; no action from the medicine; pulse slow, but intermittent, indicating some toxic agent in the system. Persistent efforts were still made to procure an evacuation from the kidneys and bowels, but failed, and he died in the later part of the day in great agony.

Post Mortem.—On the 26th, Drs. GEORGE F. CENTER, HENRY P. BROOKHEART, and myself, opened the abdomen and found extensive inflammation of the lining membranes of the bladder. That organ was considerably distended with a thick bloody material resembling that discharged through the catheter. The ascending, and part of the transverse colon, above the point of pressure of the enlarged prostate, was highly inflamed, below that point the ascending colon and rectum was healthy. The gland when removed, after being thoroughly cleansed, weighed five ounces and five drachms. When cut through, many evidences are presented of previous suppuration.

ARTICLE XIV.

CEREBRO-SPINAL MENINGITIS—SPOTTED FEVER, &c. The Summary of a Clinic in the Medical Wards of the Mercy Hospital. April, 1865.

By N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

Gentlemen:—The case before you is a boy, aged about 16 years, and until four days since was apparently enjoying good health.

His friends aver that previous to the present attack, he has never had convulsions, epilepsy, or any other nervous or cerebral affection.

His sister states, that, during the early part of last week, he complained of some symptoms of a "common cold," but on Friday evening was suddenly attacked with violent pain in the head; stiffness of the neck; fever, and, in a few hours, general convulsions. The convulsive or spasmodic paroxysm lasted but a few seconds, leaving him, however, entirely unconscious, with rigidity of the muscles of the neck and jaws. Towards morning he had another convulsive paroxysm; after which he remained in the state just described, until he was admitted to the Hospital on Sunday (yesterday) afternoon. The foregoing facts were obtained from a sister of the patient, and are not as complete in relation to the history of the case as is desirable. When admitted to the Hospital, my assistant described his pulse as small and frequent; skin moderately hot; head hot, and face flushed; respiration accelerated, but not noisy; muscles of the neck and jaws rigid, the latter making it very difficult to force the mouth open; deglutition difficult, and the mind apparently unconscious. Cold cloths were applied to his head, and a cathartic of calomel given to move the bowels. The latter having operated early this morning, he was put upon the use of permanganate of potassa, in doses of half a grain dissolved in water, every two hours. At this time (2 o'clock P.M.) he is manifesting some consciousness, and answers questions slowly, but incoherently. The mouth and chin are drawn in a

position giving the expression of silliness, or partial dementia, this being much increased when he attempts to speak. The pupils of the eyes are moderately dilated; the skin moderately hot; pulse 115 per minute, and small; respiration easy and quiet; position dorsal, with the muscles of the neck and face slightly rigid. Deglutition is still difficult. There has been some dribbling of urine, and imperfect control over the intestinal evacuations. No petechial or purple spots are visible on the surface. Such being the history and present symptoms of the patient, the important question arises, what is the nature of the disease under which he is suffering? Is it a primary attack of epilepsy, or is it simple inflammatory congestion of the cerebro-spinal centres, or is it a case of that much dreaded and fatal disease, known as cerebro-spinal meningitis, or spotted fever? The case differs from ordinary attacks of epilepsy in several essential particulars. For instance, the first convulsive paroxysm was preceded by severe pain in the head, fever, and stiffness of the neck; while epileptic paroxysms are generally ushered in suddenly without any preceding febrile or inflammatory symptoms. Again the stupor and drowsiness following the epileptic paroxysm is limited to a few minutes or hours, while in this case it has already continued nearly three days, and is only partially relieved. Uncomplicated cases of epileptic convulsions are not followed by either fever or muscular rigidity; both of which are still well-marked in this case. It is evident, then, that the case before us is not one of ordinary epilepsy. That there is a morbid condition of the cerebro-spinal nervous centres, the convulsive movements, the rigidity of the muscles of the neck and face, the difficulty of deglutition, the impaired consciousness, and the imperfect action of the sphincters of the rectum and bladder, clearly indicate. But is this morbid condition one of simple inflammation, or is it accompanied by that peculiar condition of the system which accompanies the epidemic cerebro-spinal meningitis?

The essential pathology of the latter disease, we regard as consisting in a highly septic or pyemic condition of the blood, with perverted vital affinity, accompanied, usually, by local

inflammation of the membranes and base of the brain, of such a character as to cause softening and remarkably rapid sero-purulent effusion. The local inflammation in these cases bears the same relation to the morbid condition of the solids and fluids generally, as the local erysipelatous inflammation does to the morbid condition of the blood that precedes and accompanies it, in that form of disease. Like erysipelas, also, the local inflammation is not always developed in the cerebro-spinal centres, but sometimes attacks the lungs, the heart, the serous membranes, &c. Indeed, there is not only a close analogy, but a positive relation between erysipelas and the epidemic cerebro-spinal meningitis or spotted fever; the two diseases having often prevailed together in the same community, and in members of the same family.

There have been some indications of the prevalence of cerebro-spinal meningitis in this city, during the last two or three weeks. At a recent meeting of the Chicago Medical Society, Dr. PERKINS related a case that had just occurred in his practice, in which the symptoms were strongly characteristic, including large numbers of the petechial or purple spots on the skin. The case terminated fatally in a few days. Within the present week I was called to a patient on the North Side of the city, a young man, aged about 25 years, who had been attacked the day previous with a chill, followed by pain in the right side of the chest, and in the head; some cough, which greatly increased the pain; heat of skin; suffusion of the face; pulse 120 per minute, soft and small; respiration accelerated and short. On making a physical examination of the chest, the right side from the clavicle to the diaphragm was less resonant than natural, and over nearly the whole extent of that lung was heard a well-marked sub-crepitant râle. Regarding the case as one of pneumonia, involving nearly the whole of one lung, accompanied by a fever of a typhoid tendency, I directed a powder, containing two grains of sulphate of quinia, two grains of calomel, one-third of a grain of sulphate of morphia, and one grain of pulverized bloodroot, to be taken every four hours, and sinapisms applied extensively to the right side of the chest.

Visiting the patient early the next day, I found him bathed in profuse perspiration; capillaries of the skin congested and leaden color, especially in the face, neck, and extremities; temperature nearly natural; pulse 130 per minute, small and weak; respiration frequent and short, accompanied by abundant mucous rhonchus, with dulness over the right side, the same as the day previous. Several copious, thin, dark-colored evacuations had taken place from the bowels; the expectoration was moderate and slightly mixed with blood; the mind excitedly delirious, and had been constantly so all the preceding night. Although medicines were immediately given that checked the excessive intestinal evacuations, and were calculated to sustain the strength, yet he continued constantly delirious, and every hour more exhausted, until he died on the third day after my first visit. It is true that simple pneumonia, involving the whole of one lung, with the other free, is sufficient to endanger life; but by no means so speedily and with such accompanying symptoms as in this case.

The rapid exhaustion of the patient, accompanied with the constant delirium, and the general capillary congestion, left but little doubt in my mind, that the extensive pulmonary lesion was only coincident with a more general pathological condition of the solids and fluids of the whole system. But no *post mortem* was allowed.

About the same time, another case, almost identical in symptoms, occurred, but under the influence of a powder composed of pulv. gum camphor, five grains; sulphate of quinia, two grains; and pulv. bloodroot, one grain, giving every three hours, aided by the liberal use of chlorate of potassa dissolved in mucilage of gum Arabic, the tendency to exhaustion seemed to be arrested, and the patient slowly recovered.

In the officially compiled table of mortality for the city during the month of March, I notice four deaths attributed to "spotted fever," and two to cerebro-spinal meningitis, while under the vague headings of "spasms" and "convulsions" we have, for the same month, nearly double the number reported during the three preceding months. All these circumstances

are sufficient to justify the conclusion that some tendency to cerebro-spinal meningitis actually exists in the city at this time.

That the case now before us partakes of that tendency, the soft, weak pulse; the impaired action of the sphincter muscles; the moderately dilated pupils; and fatuitous expression of countenance, clearly indicate. True, there are no purpuric or hemorrhagic spots. But it is well known that these are often absent in cases of this disease, even when rapidly fatal. We have already indicated our opinion that the epidemic cerebro-spinal meningitis or spotted fever, is a general disease, involving an altered condition both of the blood and the properties of the tissues, accompanied by a special tendency to develop local inflammation in the cerebro-spinal nervous structures of a highly pyemic character. Whether such altered condition of the properties of the solids and fluids of the body is caused by the introduction of some subtle atmospheric poison from without, or by some primary failure in the normal play of those affinities by which nutrition, disintegration and secretion are affected, it is not possible to determine in the present state of medical investigation.

While we may be thus ignorant of the essential or specific cause, the pathological condition itself is abundantly obvious. The practitioner who stands by, watching his patient laboring under a severe attack of this disease, and sees the rapidity with which the nervous, vascular, and secretory functions all fail, as indicated by the muscular rigidity and delirium passing into paralysis and coma; by the universal capillary congestion and frequent appearance of purple spots; by the suspension of important secretions; and by the rapid development of sero-purulent infiltrations and effusions wherever local hyperemia or inflammation exists, will not fail to recognize a profound alteration of the relations or affinities between the ingredients of the blood and the organized structures of the body. Assuming the truth of this position, it is obvious that one of the leading indications in the treatment is to introduce as speedily as possible, into the blood, some medicinal agent which will restore the natural properties or affinities, and thereby arrest the septic

or degenerative tendency, the continuance of which so speedily and certainly terminates the life of the patient.

That this cannot be accomplished by any amount of diffusible fully stimulants, anodynes, or evacuants, past experience has demonstrated. It is not a stimulant, soporific, or depletive effect that the patient needs, but rather an antiseptic and alterant influence. The remedies capable of producing the latter effects most efficiently are the chlorine salts, the sulphites, the permanganates, the arsenites, and the cantharides.

The efficacy of the tincture of the chloride of iron in the treatment of erysipelas, is almost universally acknowledged, but we do not recollect seeing the report of any fair trials of it in the treatment of the disease under consideration. In a few cases that came under my care three years since, the sulphites of soda and lime were given freely in conjunction with belladonna, with very satisfactory results. Since then I have not met with a well-marked case of this disease until during the last three months. In the few that have been placed under my care during this latter period, the permanganate of potassa has been used instead of the sulphites; but the number of cases treated has not been sufficient to justify the deduction of any practical conclusions. The results, however, have been such as to justify a much more extended trial of it. The first report concerning its use in the treatment of this disease, that came under my observation, was from a physician of Ohio, whose name I do not recollect, and was very favorable. To afford it a fair trial, its use should be commenced at the earliest moment and continued in such doses as to keep the blood and fluids impregnated with it so long as the severe symptoms continue. At the same time we may allay pain, restlessness, and muscular rigidity, by belladonna, when the pupils of the eyes are contracted, and by morphine when they are larger than natural. Constipation may be obviated by laxatives and stimulating enemas; while cupping, blistering, and other revulsives, may be used to counteract local determinations. In the case before us we will continue the permanganate of potassa in doses of half a grain dissolved in a tablespoonful of cold water, every two

hours for the next 24 hours, after which the interval between the doses may be lengthened first to three and subsequently to four hours. We will continue cold applications to the head and warmth to the extremities. As the cathartic given yesterday has operated quite freely, the bowels may show a disposition to become too loose.

If so we will give sufficient emulsion of oil of turpentine and tincture of opium to remedy it. The bladder must also be noted, from time to time, lest retention of urine should take place to an injurious extent.

P.S.—Since writing the foregoing report, the patient, who was the subject of the clinic, has continued gradually to improve, and is now so far recovered as to be out of danger. Certain correspondents will please take the foregoing clinical report as an answer to their letters touching this subject.

Foreign Correspondence.

Liverpool, March 26th, 1865.

Editor Medical Examiner:—

Dear Sir:—I have for a few days been staying in this growing city; and have improved the opportunity to investigate its sanitary regulations and hygienic condition.

In 1846, the borough of Liverpool procured the passage of an act for the improvement of its sewerage and drainage, and for its sanitary regulations. This, as amended in 1854, constitutes the basis of the general sanitary laws of the Kingdom.

The City of Liverpool is situated upon the north-east bank of the river Mersey. The elevation above tide-water varies, but in all parts is amply sufficient for drainage. Its population, including its dependencies, is about 450,000. The climate is more uniform than that of Chicago. The highest average temperature for the last eighteen years has been 62.6 degrees for the month of July; and the lowest 40 degrees for the month of

January. In 1864, the mean temperature has been below the average—the lowest being 16.9 degrees on the 6th of January, and the highest average, for any one day, was 66.8 degrees, on the 30th of August. These extremes are much less than in the region of the North American lakes. The winds from the west and south-west are mild, those from the east and south-east cold.

The sewerage of the city is directly into the river Mersey, in which the tides are very high, at some seasons of the year reaching thirty-three feet, and producing a current of more than six miles an hour, and yet the deposit of the sewerage in the bed of the river, along its banks, and at the bar, is a serious cause of complaint. The odors emanating from the stream, especially at low water, are identical with those so familiar to the olfactories of Chicagonians, while engineers think that the bar at the mouth of the river is materially augmented by the solid matter brought down from the city. The influence of this method of sewerage upon the health, and the commercial interests of the city, is being carefully investigated by men of the highest scientific abilities. If Liverpool suffers from this cause, with its river daily swept by the high tides and rapid currents, what must be the condition of Chicago with, in a very few years, an equal population?

I am under obligations to the Health Committee for the sanitary acts, and also for the report of the Medical Officer, for the year 1864. The sanitary acts have reference to sewerage, construction of dwellings, and especially lodging-houses, location and government of slaughter-houses, manufactures that influence the public health, and all other matters that have a bearing upon the hygienic condition of the city.

The report of Dr. French, the Medical Officer, is full of valuable information. Some of the facts which it contains may interest your readers. It appears that during the last three years the mortality has been steadily increasing. For the year 1864, it amounted to 36 deaths to every 1000 of its inhabitants. The increased percentage of mortality was due mainly to pulmonary and zymotic diseases, and especially to the latter, which caused 28.9 per cent. of all the deaths for the year.

Typhus fever, with typhoid, and infantile remittent, included in the report under the general head of typhus, seems to have been epidemic throughout the year. In 1860, the total number of cases under treatment in the city was 618; in 1864, the number reached 4157. The ratio of mortality to the number of cases treated, varies with the location and circumstances of the patients, from two per cent. in the better class of families, where, indeed, it seldom occurred, to twenty per cent. in the Toxteth fever wards. The report says, referring to the death registry of typhus:—"We find that though the weekly lists occasionally give fallacious indications of subsidence, yet the quarterly returns showed a steady increase, not only in the numbers of its victims, but in the extent and range of its fatal prevalence." In 1860, typhus produced 3 per cent. of all the deaths; in 1862, it accounted for 5.2 per cent.; in 1863, for 7.6 per cent., and in 1864, for 10.5 per cent. of all the deaths —thus showing a steady increase for the three years.

In discussing the causes of this epidemic, some important facts are brought to light. It appears that a large proportion of the poorer class of people find it difficult to obtain employment. Thus, in 1861, the number of public paupers was increased from something less than 13,000 to 15,000, and in 1862 to 16,000; while the number of persons relieved by charitable institutions was much greater. The Council of the District Provident Society relieved in 1861, 82,334 individuals, a large excess over previous years; and in 1863, the number reached 182,093. This seems enormous, but is based on official reports. And yet Englishmen have told me that there is no pauperism, or almost none, in England, that there is no destitution for the want of work. The statistics of Liverpool show, either that here, at least, labor is in excess, that bones, muscles, and nerves are more abundant than iron, wool, and cotton, or, that the nations of the world are less dependent than formerly on the manufactures of Great Britain.

The subject of overcrowding dwelling and lodging-houses, is also discussed. The smallest amount of air space sanctioned by the Health Committee of Liverpool is 300 cubic feet, with

the means of rapid renewal. Practically, this amount is often reduced; whole families live and sleep in rooms where there is not on an average one-half of this space. In the registered lodging-houses, the regulations can be enforced, and but few cases of fever have been found in them. On the other hand, in the private dwelling-houses, the most fearful cases occurred, and almost always in overcrowded rooms. This overcrowding not only developed disease, but, in many cases, exhibited a very depraved social and moral sensibility. Cases are reported, where, in small rooms, without any furniture, men and women were found lying promiscuously on the bare floor, and one case I find reported, of two *young married couples* occupying the same room, with only one straw mattress for a bed. The sanitary act forbids the erection of houses of more than three stories, and a large number of houses front narrow streets, and have no back yards, being built up against other houses, with no back windows, even. These are called "up and down" houses, and amount to 18,000; nearly all of them are more or less overcrowded.

The accumulation of emigrants here, has been one cause of occasional overcrowding. The report mentions one peculiarity of the Irish and German emigration during the last year. Formerly, the inspectors found among them the average number of children and persons of advanced age, but in 1864, they are nearly all of them active young men and women, and amount in all to 125,445. In 1860, the total from this port was 83,774.

The report demonstrates that filth has been largely instrumental in producing and keeping up the epidemic. In fact, filth always accompanies destitution and is often produced by it.

Drunkenness is also shown to have kept pace with the epidemic, and has no doubt acted as a cause. It is a sad comment upon human reason, that absolute starvation should be attended with this vice, which brings neither strength nor comfort, but such is the fact. The history of the epidemic, and of the people, during the last three years, points to destitution as its chief cause.

The conclusions of the reporter upon this subject, are in the following words:—

"1st. Great distress in the laborer's class, accompanied by an enormous increase of parochial pauperism, existed previously to the Winter of 1861 and Spring of 1862, when the typhus began to be in permanent excess.

"2d. The distress, and the prevailing fever, were both so simultaneously increased during 1862, as to indicate the parallelism of cause and effect.

"3d. The number of recipients of workhouse relief in 1863, though reduced by 186 out of 16,003 in 1862, showed that in spite of a partial revival of trade, the want was exceptionally great as compared with the ten years before 1861.

"4th. The transactions of the Central Relief Society, and the condition of the fever patients of the workhouse hospital in 1864, demonstrate that whatever might be the bettered circumstances in trade or commerce, the distress was not alleviated among the persons immediately above the rank of habitual paupers.

"5th. It was of necessity, and by reason, *firstly*, of want of employment, and, *secondly*, especially in 1864, by the losses sustained in their homes by sickness, that so many individuals of the working classes ceased to contribute their deposits in the "District Provident Society."*

"6th. The pressure which prevented the better-off from exercising a prudent saving, threw the more necessitous into abject want."

Such are the conclusions of the reporter, and yet I find that even during this period of destitution, the streets of Liverpool were full of the indications of suddenly acquired wealth. Fortunes of large amount were realized by speculations in cotton, while English ships, monopolizing the carrying trade of the seas, reaped rich harvests; and thus Liverpool and New York became competitors in the strife for *shoddy* notoriety.

During 1864, the deaths from small-pox were 482, of which 96 cases were reported to have been vaccinated. In 1863, the deaths were 100; in 1861, it was hardly found in the death

* This is a Savings Bank, and the number of depositors in 1864 was 21,822 less than during the year 1861.

registry. These facts show the close relation between this disease and typhus, so far as the general causes are concerned.

Diarrhœa was also more prevalent, especially during the months of July and August, of the year 1864, than during previous years. These months were remarkable for their extreme dryness, the amount of rain being less than one-half of that of the same months of 1861, while the mean temperature was somewhat greater. The deaths from diarrhœa, for the quarter ending September, 1861, was 222; for the corresponding quarter of 1864, 601.

Dr. FRENCH suggests whether the effect of rain in diminishing diarrhœa, may not in part be due to the fact that by it the streets are thoroughly washed, and the sewers flushed. In this way, a good rain storm may carry off more filth in a day, than all the scavengers in a week. He suggests the liberal use of the river water, through hydrants, upon the streets, and into the sewers. The query is pertinent to Chicago, as well as to Liverpool.

The mortality from scarlatina and measles, unlike that of small-pox, has been below the average during last year. Lung diseases have been, if not more frequent, at least more fatal, with the exception of tuberculosis. The increased fatality is attributed by Dr. FRENCH to the lower temperature of the year. He says:—"The popular fallacy, which assumes that cold weather is tonic, bracing, and healthy, or the old adage, which teaches that a mild winter makes a full churchyard, cannot have originated in cities, where man is enfeebled by the cares, the vices, and the sanitary evils of a highly artificial civilization." In regard to tuberculous diseases, it is remarked that, "the bills of mortality from this class of complaints are always light in very sickly seasons, or when zymotics are unusually fatal." No attempt is made to account for this fact, if fact it be. J.

Proceedings of Societies.

PROCEEDINGS OF THE DeWITT COUNTY MEDICAL SOCIETY.

Reported by C. GOODBRAKE, M.D., Secretary.

The Society met in annual session at the office of Dr. MADDEN, in Clinton, on the 3d day of April. The President, Dr. HUNT, in the chair.

The Secretary being absent, Dr. GOODBRAKE was appointed Secretary *pro tem.*

The minutes of the last meeting were read and approved.

The election of officers being in order, the following gentlemen were elected for the ensuing year:—

President---------- Dr. J. H. TYLER.
Vice-President---------- Dr. Z. H. MADDEN.
Treasurer---------- Dr. J. B. HUNT.
Secretary---------- Dr. C. GOODBRAKE.
Censors, { Dr. J. J. LAKE, Dr. W. W. ADAMS, Dr. THOS. W. DAVIS.

Delegates to the Illinois State Medical Society—Dr. B. S. LEWIS, Dr. D. W. EDMISTON, Dr. J. H. TYLER.

Delegates to the American Medical Association—Dr. W. W. ADAMS, Dr. CHRISTOPHER GOODBRAKE.

The President elect, Dr. TYLER, on taking the chair, made a few very happy remarks upon the importance of keeping up county medical organizations, and his argument proved very conclusively that medical associations were productive of great benefit, both to the profession and the public.

Drs. ADAMS and MADDEN were appointed essayists for the next meeting.

On motion, Cerebro-Spinal Meningitis was chosen as the subject for discussion at the next meeting.

On motion, it was ordered that the proceedings of this meet-

ing be published in the *Chicago Medical Journal* and the *Chicago Medical Examiner.*

On motion, the Society adjourned, to meet in quarterly session at Clinton, on the first Monday in July next.

This meeting was a successful effort to revive the Society, which, since the war, had only met at irregular intervals. But we now look forward again to full and beneficial meetings, such as we were wont to have in days gone by.

Our Society, we believe, can boast of having furnished as large a quota for the service of our country as any other association having no more members. Dr. EVAN RICHARDS served two years and six months, and was killed at the battle of Raymond, Miss. He had attained to the rank of Lieut.-Colonel, and was, at the time of his death, in command of the 20th Ill. Inf. He was a brave soldier, and a "thorough read" and careful practitioner of medicine. In his death, this Society lost one of her best members. Dr. B. S. LEWIS was a Captain, and commanded a company in the 107th Ill. Inf., until he was compelled to resign, on account of physical disability. Dr. GOODBRAKE served three years and four months, as Surgeon of the 20th Ill. Inf.; and Surgeons WRIGHT, ROSS, R. T. RICHARDS, and SHURTLEFF, are still in the service; but from present indications we have strong hopes that they will soon be permitted to return to their peaceful homes, and rest from their arduous duties in the field. Would it not be grand if they could all meet with us at our meeting in July next?

ON A CASE OF APOPLEXY OF THE SPINAL GRAY SUBSTANCE, ATTENDED WITH CONVULSIONS, WITH PATHOLOGICAL EXAMINATIONS AND REMARKS.

BY M. GONZALEZ ECHEVERRIA, M.D.

In the study of pathology two sciences are necessarily involved, and they refer respectively to the living and dead organism: the one of these sciences is physiology, the other morbid ana-

tomy. The one investigates the phenomena of life, and its object is to establish their laws; the other controls or makes the law good by disclosing the relationship between disease and the anatomical elements; for we cannot understand disease without comprehending the alterations or changes in the physical or chemical relations of the organic elements. It frequently occurs, however, that physiological experiments and pathological investigations are incompatible in their results; that the direct observation of the one renders invalid the theories of the other. The discordance is, among other instances, fully illustrated in the unsettled opinion as regards the way in which sensative and motory impressions are conveyed through the different parts of the spinal cord. Assuredly, the reasons of this discordance need not be insisted upon here. Experimental physiology has unquestionably determined great revolutions in modern medicine; but the fact is, that though practical in its scope, it is liable to become quite speculative from the vastness of the issues in the application of experiments to disease, and very frequently, too, from not availing itself of the important assistance which histology brings to the investigation both of normal and morbid phenomena, and, perhaps, still more to the proper performance of the very physiological experiments themselves.

The following case may serve to throw some light on the functions of the gray substance of the spinal cord, and on the symptoms accompanying its alterations or injuries. The examination of the cord I was compelled to make whilst the organ was in a fresh condition, in order to preserve it for presentation to the New York Pathological Society, where it was shown by Dr. L. A. Sayre, in April, 1864. I regret very much that, after the presentation, putrid softening should have prevented a more satisfactory microscopical examination of the structural changes in different sections of the cord, submitted to previous maceration in chromic acid.

P. R., aged 18, of slender but well developed form, enjoyed uninterruptedly good health to January, 1863, when he was attacked with rheumatism, extending to all the joints. His parents were both living: the father had chorea when young, and recovered completely from it. The boy was seized with slight imperceptible twitchings, about the 10th of April, 1864, one week before the day I visited him in consultation with Dr. Sayre. Previous to that date, he had only complained, to use his own language, of "pain in the neck, from too much hanging of the clothes on that part." At this time, Dr. Sayre ascer-

tained that there were pain and spasmodic contractions of the upper limbs, produced upon pressure on the back of the neck. There was no fever, no headache, nor any other manifest symptom. The convulsive movements, gradually increasing, became so violent that he took to his bed, and remained there for three days prior to our visiting him in consultation. He retained his intellect perfectly clear, and had no fever during this period, nor did he complain of pain in his head. When we saw him, he was lying in bed, restrained by straps tied to the limbs, which were thrown into constant violent convulsions. The movements were quite involuntary and instantaneous, rapidly succeeding each other, and of similar character to the convulsions of chorea. He could execute every movement of the limbs; indeed, he could move them suddenly, but if he attempted to perform the movement slowly, the power of co-ordination failing, the convulsions occurred. Pinching and pricking were felt in the skin of the trunk and extremities, and he also complained of pain in the back and in the limbs under the straps, the skin being in those parts already bruised by the rough jerking. There was no enlargement or inflammation of the joints, and he did not feel the limbs cold or numb. He could, with great difficulty, answer the questions during our long examination, evidently showing that the speech was impeded from incapacity of co-ordination in the movements of the muscles of the tongue. There was no trismus. The tongue could be protruded without difficulty, and was moist and clear. Deglutition was impossible from pharyngismus at every attempt to pass anything into the œsophagus. Noise did not seem to exert any influence on the production of the convulsions. The eyes appeared normal, with very slight injection of the conjunctivæ, and no remarkable change in the size, shape, or color of the pupil. Nor did the patient give any signs of photophobia. The countenance was rather pale, with an expression of distress, and the surface of the body was dry and cool, perspiration being only perceptible on the palm of the hands. Respiration was very labored, and restlessness of the patient prevented our ascertaining the rhythm of the pulse, which was nearly made out 21 in about eight minutes, and found very little resisting. The abdomen was contracted and tympanitic, gas escaping from the bowels during the paroxysms; constipation had existed for four days. There was no retention of urine, which was voided shortly before our arrival. The urine was acid, clear, and free from albumen or sugar. Crystals of basic phosphates were observed on microscopical examination. There was no erection

of the penis, nor its abnormal development produced by the habit of masturbation. The patient had had no food, nor any rest for nearly seventy hours. He had been cupped on the back of the neck.

Under the above circumstances, it was determined to resort to anæsthesia to arrest the convulsions, and when controled, to sustain the patient by strong beef-tea, stimulants, and coffee, and to act on the bowels by a turpentine and castor oil injection. The inhalation of chloroform, applied by Dr. G. Doyle, immediately repressed the convulsions, but they recurred, as soon as the anæsthetic was suspended, with the former intensity. The anæsthesia was begun at 7 o'clock P.M., and repeated at every threatening of a paroxysm. At 2 o'clock A.M., the chloroform was withdrawn, it being observed that the pulse was extremely weak and fluttering. During the continuation of the anæsthetic, nourishment and stimulants were given to the patient, as also the turpentine injection. At last, when chloroform had to be discontinued, in consequence of the state of the pulse, the convulsions recurred, abating, however, spontaneously, and being followed by a short period of rest, until 6 o'clock A.M., when death took place quietly; the patient being throughout in a clear state of mind, and having had a copious passage of a dark matter shortly before expiring. It was noticed that each succeeding period of rest was longer than the preceding, until death ensued.

Post mortem examination was made forty hours after death, the weather being very cold. Drs. Sayre, Doyle, and Winston were present. The subject was lying on the back, and was not emaciated. The *rigor mortis* had already disappeared. The skin on the iliac fossæ had the bluish discoloration of the early stage of putrefaction, over the joints of the limbs, and on the back of the body it was bruised—the epidermis being completely destroyed on the sacral region. Cadaveric congestion was but little marked on the back. The pupils were largely dilated. It was only allowed to examine the cervical portion of the spinal cord, which was laid bare from the occipital bone to the commencement of the dorsal region. On opening the canal the vertebræ exhibited their normal appearance, without any congestion in their osseous tissue, nor morbid growth protruding on the cavity of the canal. The theca vertebralis was firmly adherent to the canal and intensely congested, adhesions being firmer on the upper than on the lower part of the cervical region. The spinal arachnoid was not thickened nor apaque, and adhered to the cord. The spinal fluid was of a red color,

and not considerably increased. The size of the cord seemed to be normal in the cervical portion, removed from the lower extremity of the calamus scriptorius to the beginning of the dorsal region. The white was found firmer than the gray substance. The inferior surface of section in the removed portion of the cord showed that the extravasation of blood had been limited in that part to the posterior cornua, and to both tractus intermediolaterales, the anterior cornua appearing scarcely affected. There was a very slight congestion of the white substance, which seemed in nearly a healthy state. At the upper surface of the section, the gray substance was not so much injured, and exhibited a few spots of extravasation, occupying likewise the posterior portions, while the white substance was apparently in a normal condition. On dividing the cord through the posterior median line, apopletic effusions were found along the gray substance, most of them located nearer to the posterior than to the anterior cornua, and a few extending upon the whole width of the gray substance. The capillary vessels were to the naked eye increased around these extravasations, of a bright scarlet, non-coagulated blood. The congestion of the white substance was only marked in some spots near the posterior median fissure. The finger passed through the foramen magnum could detect firm adhesions between the cerebellum and the membranes, and between these and the occipital bone.

On microscopal examination of the white substance, the nerve-fibres, both in the anterior and posterior columns, were found with the cylinder axis in a state of granular disintegration, surrounded by a fine granular amorphous matter, and filaments of connective tissue. The capillary vessels had undergone a granular alteration only in the vicinity of the gray substance, which, indeed, was the part extensively diseased. In this substance most of the capillaries appeared distended or torn, with their coats granular throughout. The varicose condition of the minute vessels was very plain, when magnified to 100 diam. The gray substance was composed of a connective tissue, filled with very fine granular amorphous matter, containing very few fatty globules, and in some places mixed with crystals of hæmatosine: rarely, there were also spherical nuclei, bearing a resemblance to the *myelocites* described by Ch. Robin, in the gray substance of the nervous centres. None of these were found with the white substance, and most of them were in a state of disintegration. In the specimens here referred to, and which were taken from the substance of the

posterior cornua, there were, besides a few broken nerve-fibres, two cells, one of them corresponding by its characters to the ganglionic or sympathetic cells, described by Jacubowitsch, and surrounded by a sheath containing several small nuclei. Both cells were very glanular, without any nuclei, and dark from infiltration of pigment granules and of the coloring matter of the blood. Large multipolar cells with similar aspects were found in preparation of the anterior cornua. The conical epitholeum of the central canal had undergone considerable disintegration, in most of the places where the central part of the gray substance had not been encroached upon by the effusion of blood. The alteration in the nerve-fibres and cells in the ganglia of the posterior roots was alike, though in a much less degree, to that of the same elements in the spinal cord. Their capillary vessels were very abundant and enlarged. The vascularity of the membranes was considerable, the vessels being in several places surrounded by lympth infiltrated into the connective tissue. No inflammatory corpuscle was observed in any of the different preparations.

I will not dwell at any length on the share which hereditary and rheumatic influences might have had on the etiology of the case already reported. Neither will I discuss the question whether it should be looked upon as an instance of true chorea. However this may be, it is quite certain, that the apyretic character of the disease, the absence of delirium, hyperæsthesia, and paralysis, with the several other symptoms, reject the idea of considering it as a case of spinal meningitis; although, on examination of the cord, a few signs of the early stage of meningitis were detected, but without the usual increased quantity of cerebro-spinal fluid, or the congestion and inflammation, or softening of the tissue of the cord itself.

Incomplete as it is, the pathological examination, compared with the symptoms exhibited by the case, presents unquestionable value as regards the functions of the two substances of the spinal cord. One fact strikes at once, *i. e.*:—the unimportant derangement of the eye with such an extensive injury of the cilio-spinal region. It is true that the lesion was almost limited to the gray substance of the cord, and I do not wish to pronounce upon any interpretation of the phenomenon, which should seem to reveal that the vaso-motory nerve-fibres must ascend in very small number through the gray substance of the cervical portion of the cord. The case furthermore proves, that irritation of the gray substance of the cord does not always produce hyperæsthesia, nor does alteration in this part of the

cord and anæsthesia, or paralysis of movement, always accompany each other, as advanced by Dr. Brown-Séquard.* It again contradicts the opinion of the same skilful physiologist, who, in accordance with the above views, states that the transmission of sensitive impressions chiefly takes place through the central gray matter.† The evidence afforded by this case grows stronger, since it agrees with a similar observation recently made by Lockhart Clarke. This great anatomist, with the ability for which he is so conspicuous, examined the spinal cord in a case of paralysis, attended by Dr. Reynolds, and found the gray matter of the cord almost wholly destroyed on the lower part of the cervical region, without the slightest diminution of sensibility in the trunk or lower extremities, and with painful hyperæsthesia in the muscles of the left arm, and none in the right arm, *although equal portions of the central gray substance were destroyed on the right and left sides.* There was, in addition, incomplete paralysis of motion, limited to the left arm, and due to a large indurated mass, surrounded by softening of the substance in the middle of the right cerebral hemisphere, and to softening also of the fornix, corpus callosum, and of the thalamus opticus in the right side.‡

It might be supposed that anæsthesia in this, like as in other similar cases, was unnoticed, because the remaining nerve-fibres of the gray substance compensated for the loss of sensibility. Such an opinion put forward by Dr. Brown-Séquard to explain the rarity of anæsthesia in cases of deep alterations of the cord, requires the previous demonstration of a sphere of action in the nervous force, capable, like that of electricity, of extending itself over a large surface. Indeed, some physiologists admit the fact as probable in the very extremities of the nerve-fibres, when, free from its oily content, the fibre is reduced to the cylinder axis; but were the hypothesis true, such a nervous atmosphere could never be extensive or intense enough to conceal the existence of some local anæsthesia, for reasons too obvious when we consider the arrangements of the nervous elements. It is true, the experiments of Van Deen and M. Schiff, show that even microscopical fragments of the spinal gray substance are capable of transmitting sensitive impressions, yet, it has been proved by observations, recorded by Cruveilhier, Lockhart Clarke, and Schiff himself, that under such circumstances the sensation is dull and its perception very slow. And Brown-Séquard, him-

* "Lectures on the Central Nervous System," pp. 124, and following.
† Loc. cit., pp. 23 and 130.
‡ Brit. and Foreign Med. Chir. Review, July, 1864, pp. 200, and following.

self, lays it down as a conclusion, that "anæsthesia in cases of disease of the spinal cord, is a symptom indicating that the gray matter is altered. This conclusion seems to hold good, also, with respect to the loss of each of the various kinds of sensibility." Before coming to this conclusion, he states, "that the nerve-fibres employed in the transmission of each of the sensitive impressions of *touch*, *tickling*, *pain*, *heat*, and *cold*, and the peculiar sensation which accompanies muscular contraction are as distinct, one from the other, as they are from the nerve-fibres employed in the transmission of the orders of the will to the muscles."* Assuredly these assertions are not altogether compatible with the preceding theory, by which Brown-Séquard attempts to explain why sensibility is so rarely lost in cases of deep alterations of the spinal cord.

On the other hand, the case wholly confirms the results arrived at by Van der Kolk, who holds that "the gray matter in the spinal cord serves solely for motion, the posterior rather for reflex action and the co-ordination of movements, while sensation is transmitted upwards exclusively through the posterior and lateral medullary columns."†

It is no less important to remark the labored respiration, in connexion with the injury sustained by the tractus intermediolateralis in the lower part of the cervical region; tractus which, as demonstrated by Lockhart Clarke, is passed through by the roots of the spinal accessory nerve.

There was, again, a striking similarity between the alteration undergone by the cord, and that resulting from poisoning with strychnine, when, as observed by Van der Kolk and other physiologists, a great congestion and extravasation occur in the gray substance of the cord, with violent convulsions, and neither loss of consciousness nor pain, whilst the medullary or white substance of the cord undergoes very little or no change. Such perfect similarity of cadaveric signs might possibly have awakened the suspicion of this being an instance of poisoning from strychnine. However, the gradual development of the disease, its comparatively long duration, the absence of opisthotonos, acoustic hyperæsthesia, trismus, protrusion of the eyeballs, and of the profuse perspiration attending poisoning from strychnine, as well as the *rigor mortis*, so long persisting in such cases, could not have given ground to that opinion.

Last, though not the least important point. To what extent

* Loc. cit. pp. 125 and 130.

† On the Minute Structure of the Spinal Cord and Medulla Oblongata. New Sydenham Society, London, 1859, p. 77.

did the administration of chloroform favor the congestion and extravasation discovered in the cord? It would, perhaps, be difficult to answer this question, but, it was evident that instead of deriving any permanent relief from the anæsthetic, the spinal cord continued as capable as before its administration of inducing violent convulsive movements, until the exhaustion of its reflex faculty; a fact again disclosed by the liability of epileptics to a renewed attack, when submitted to the influence of chloroform or ether, and decidedly warns against the danger of the indiscriminate use of anæsthetics in the treatment of epileptic diseases.—*N. Y. Med. Journal.*

ON SOME POINTS HAVING REFERENCE TO THE DIFFERENTIAL DIAGNOSIS OF FIBROUS TUMORS OF THE UTERUS.

By Dr. C. H. F. ROUTH, Physician to the Samaritan Hospital for Women and Children.

The symptoms of fibrous tumor most dwelt upon in speaking of the disease are an enlarged abdomen, with a hard, rounded and solid tumor to be felt through the abdominal parietes in and about the uterine region, extending sometimes as high as the epigastric region, both lumbar regions being clear on percussion, and the umbilicus sunken in, not projecting. The tumor is also to be felt *per vaginam*, involving the uterus; an occasional loud and systolic souffle is to be heard over the tumor; menorrhagia is more or less intense; there is absence of fluctuation; the length of the uterine cavity is increased; and, lastly, owing to the close union of the uterus and bladder, the growth is drawn so near the abdominal walls, that it precludes the passage of the hand low down between the tumor and the walls of the abdomen. I will speak of these symptoms as I go on, to test their relative value.

1. *Physical Hardness, Roundness, and Solidity of the Tumor.*—The feel of a fibrous tumor has been considered by many as almost pathognomonic. This, in connection with its rounded and lobulated character, is such, that the combination of the two characteristics would seem to make error almost an impossibility. Any one, however, accustomed to examine the cases of cellulitis and hæmatocele, must know the contrary. I know that the same thing has been observed in cases of ovarian dropsy, and it may be laid down as a general proposition, that

a *thin* fluid, and *a fortiori* a *viscid* one, may be included in an inelastic bag and convey to the touch the impression of a solid.

I will illustrate this law by an experiment; and then mention a remarkable example in the living subject. Here is an ox's bladder contained within a calico bag. This bladder has been kept in spirit for a week, and is quite inelastic. The calico bag I put around it lest the bladder should burst. This bladder is now full of water, and fluctuation is quite evident everywhere. At its opening, however, you see I have affixed a tube connected with this pump, by which I can force in water *ad libitum*, securing its retention by this stopcock in the connecting tube. As I pump in water, you will find that fluctuation will gradually cease, till none of you shall be able to detect it; on the contrary, it will feel quite like a solid. If this be so with so thin a covering as this membrane and piece of calico, *a fortiori* will it be difficult in many cases to recognize fluctuation through the abdominal parietes; for I am quite sure fluids are contained within cavities of the body quite as tensely as in this bladder.

The following case, however, is so satisfactory on this point, that I cannot but mention it:—

An inmate of Bedlam Hospital, about thirty-five, declared herself pregnant; and Mr. Lawrence requested Dr. Greenhalgh to see her. Dr. Greenhalgh kindly allowed me to accompany him in his visit. We found a woman with a large tumor extending to above the umbilicus, very hard, nodulated, and giving altogether the impression of a solid tumor. The breasts, however, gave no indication of pregnancy. An examination *per vaginam* conveyed the same impression. The os, however, was hard; evidently that of an unimpregnated woman, and high up. The enlargement was chiefly in front of the uterus; and conveyed generally the same fibrous sensation. She passed urine freely; and, indeed, some was shown to us. On more carefully examining the tumor *per vaginam*, we thought that at one part we could detect some very obscure fluctuation, or at least a part less hard than others. It was thought wise that the bladder should be emptied of its contents. This was done; and about a chamber-pot and a-half of thickish urine was drawn. On examining the abdomen after the operation, the tumor was gone; and yet, had we trusted to mere manipulation, both Dr. Greenhalgh and I would almost have positively asserted that, if ever we had before felt a fibrous tumor, this was one.

2. *The Auscultatory Signs of an Uterine Fibrous Tumor* are four in number:—*a*. Two souffles, one a tubular, another a ves-

icular murmur; *b.* A thrill; *c.* A single or double cardiac sound; *d.* Absence of multilocular arrangement indicated on percussion.

a. Fibrous tumors ars sometimes the seat of a souffle. Most writers do not discriminate between the two, and appear to refer them to the same cause. Thus it is described by Dr. M'Clintock as always

"Synchronous with the pulse; sometimes short and abrupt, a mere whiff accompanying each arterial pulsation; at other times, prolonged and musical, and not to be distinguished by the most acute and practical ear from the *bruit placentaire.* Like it, it is occasionally loud and intense for some pulsations; then becoming feeble and almost inaudible. Again, it can be diminished and suppressed by moderate pressure of the stethoscope over the spot. It is present in those who have sustained no loss of blood, as well as in the anæmic." He adds that, "although a very interesting phenomenon, it is not one of any special diagnostic value, being common to pregnancy and ovarian disease, which are the two conditions most likely to be mistaken for fibrous tumor of the uterus." (M'Clintock's *Diseases of Women*, p. 131.)

However unwilling to differ from so high an authority, I cannot but take exception to the sweeping conclusion drawn. Nothing can be more graphic and true than the greater part of this description; but I think the fact is, that two very different souffles are here spoken of. The true *tubular* souffles are, so far as I know, very rarely, if ever heard in pregnancy and ovarian disease. The *bruit placentaire*, or one very like it, may be, perhaps often is.

Now, I believe that these two souffles are produced by two different causes. The first, or *vesicular*, *bruit placentaire*, if you like, is produced by the combined action of the large vessels immediately coming into and supplying the organ. The latest writer on the uterine appendages, Dr. Savage, believes these to be the only cause of souffle in fibroids, which are supplied largely by veins and and arteries, usually at each side.

But, I imagine, these produce only the vesicle murmur. The same cause produces them in pregnant uteri; and it is not due to placenta, since it is heard after delivery, as long as the vessels supplying it are in the hypertrophied condition. It was long since shown by Nægele (*On Obstetric Auscultation*, 1838), that in aneurismal varix, where a direct communication for the blood exists, so that it passes from the artery to the vein, the

opposed or interfering currents, gave rise to a sound which may exactly resemble the *bruit placentaire*. The sound is also heard loudest at the point where the uterine arteries, reaching the broad ligament, become thicker in diameter, more tortuous, and sink into the uterus. How far the connexion between the arteries and veins in the pregnant or hypertrophied uterus may assist in the production of this sound, or whether the general circulation throughout the uterus must be taken into account, because so extensive, is a point for future inquiry. If we consider, however, that the arteries in the hypertrophied organ directly communicate with the large uterine veins; either, according to the Hunters, through the cavernous structure of the placenta; or, according to Webber, through the network of collossal capillaries; or, according to Goodsir, through a great cavity, which is everywhere traversed or intersected by filamentous prolongations of the uterine veins—we see how, physically, a sound like that of aneurismal varix could be produced by causes somewhat analogous. The later researches of Dr. Savage will rather explain the production of the sound from an extended circulation, if we assume the same structure to be present in the impregnated organ, only more extended in the hypertrophied or pregnant uterus. Now, it is unquestionable that, in many cases of fibrous tumors at their connection with the uterus, we have, as in pregnant uteri, elephantine venous sinusis. Such was found to be the case at the *post mortem* examination of Dr. Matthews Duncan's example of fibrous tumor, to be hereafter noticed.

This uterine murmur, or *bruit placentaire*, in either case originating from the same cause, is destroyed by pressure, if this be sufficiently strong; it may be by the stethoscope; it may be by intense uterine contraction, particularly in the vicinity and all around the *locale* of its production, exactly as it is abolished at the height of an uterine pain. Auscultation proves, then, that the souffle, after gradually rising in pitch up to the moment of greatest uterine contraction, becomes at last inaudible, except at the groins, where it is still heard, though more feebly so. For the same reasons, also, it is not heard immediately after delivery, when the uterus is firmly contracted, but again becomes audible in twenty minutes or half an hour afterwards, when, the uterine muscles having somewhat relaxed, the vessels again enlarge; a state which persists, except at intervals, for 48 hours or so, till such time as, in the process of involution, the vessels become permanently smaller. This, then, is

one souffle which is occasionally heard in fibroids, and in every way resembles the placental souffle; and it is heard loudest at the groins, or over the entrance of the uterine arteries.

The *tubular* souffle, however, is different. It bears the same relation to the former as bronchial respiration does to vesicular, and is, I believe, due to pressure upon the aorta, and direct transmission of the aortal sounds through the fibrous growth. It needs only the continuity of a solid body between the aorta and abdominal parietes, and the aorta to be slightly compressed thereby, to give rise to these sounds.

A remarkable case, illustrative of this explanation, is given by M. Hérard (*Bull. Soc. Anat.* xxv, p. 148), where a very thin woman complained much of epigastric pulsations. There was no tumor; but ascultation revealed a souffle and a thrill. The case was diagnosed as one of aneurism. She died shortly of phthisis. The *post mortem* examination revealed a voluminous and also indurated left lobe of the liver. This it was that transmitted the aortic beat, and, by expression, produced the souffle.

We have, doubtless, all met with analogous cases, particularly in weak females, and especially where the middle lobe of the liver was indurated. Pressure over any large artery by a stethoscope will give rise to the same sound.

The position in which this sound is heard loudest also varies from that where the vesicular murmur is most audible. This is strongest at the inguinal region; the tubular souffle is generally heard loudest at some prominent point of the tumor, or within the vagina upon the inferior portions of the growth. It requires also some strength to compress the aorta through a large fibrous tumor; and hence one reason why it is rarely, if ever, destroyed by pressure of the stethoscope.

b. This tubular souffle is occasionally accompanied by a *thrill.* This thrill is very similar to that which is communicated to the ear in the case of an aneurism of the aorta, as M. Hérard's case proves. Indeed, in well marked cases, the musical note which accompanies the souffle and thrill are so exactly alike the sounds heard in cases of aneurism in the neighborhood of the heart, that it would seem impossible to detect a difference. Now, so far as I am aware, a thrill is never felt either in ovarian disease or in pregnancy. This is also the case in regard to the musical note. Once only have I heard this sound in the case of pregnancy. Then it was heard with the stethoscope upon the sacral region, the patient lying on her abdomen; and we can understand this. The aorta was pressed upon by the enlarged uterus, and the musical note, which could not be trans-

mitted through the liquor amnii, was not heard in front. Behind, through the solid sacrum, it was readily heard. So far, this exceptional instance is a good explanation of its occurrence in fibroids.

c. Closely related to the tubular souffle is the *single* and *double* cardiac sound. This one sign, revealed by auscultation, I think most important; the more so, as it has not been hitherto sufficiently dwelt upon.

Let us remember that a fibrous tumor is, in most cases, a solid tumor. If it be of moderate size, and in any way can be or is compressed against the aorta directly or through the uterus—if the fibroid be placed in front of the organ—then the sounds of the aorta should be transmitted through the tumor. I do not know why it is; but these sounds are observed in practice to be of two kinds; first, a *single* sound synchronous with the systole of the heart; secondly, two sounds synchronous with and representing the double sound of the organ. I believe that whenever either of these sounds occur, you have a solid tumor between your stethoscope and the aorta; and so that it is a favorable argument, *cæteris paribus*, for believing the tumor to be fibrous. It may occur in scirrhus of the uterus also. This sound is very distinct from *impulse*. I have seen and felt impulse in ovarian dropsy; but then the sound is not heard. This is especially true in regard to the *double* cardiac sound. Ovarian tumors, except in very exceptional cases, and only where they are solid, if at all, do not transmit the cardiac sounds; fluids being generally non-conductors of sound.

I have said that the tubular souffle is often heard loudest within the vagina. Occasionally it may be heard here with a common straight stethoscope; and if this be long, and made of glass, it is very easily applied. The patient is put on her left side; the nates are brought to the edge of the bed; and the thighs are well flexed on the body. If the woman be not too fat, and have a good perineum, and pressure be made on this part by the stethoscope, the instrument impinges the wall of the vagina against the tumor, and the souffle may be heard through it. In stout women, the stethoscope may be safely introduced *per vaginam*, and made to press upon the tumor; and, because made of glass, the rubbing of the clothes upon it is scarcely heard, so that no exposure is needed.

I have also used a curved stethoscope made of glass with advantage. It may then be passed when the patient lies on her back.

As a rule, however, I prefer the instrument I now show you,

which I call a *vaginoscope*. It consists of the ordinary double stethoscope, to the distil end of which is attached a wooden speculum; this may be introduced as a speculum; and the ear-pieces being applied to the ear convey any sounds heard in that region. At any rate, in obscure cases, you will find it useful.

I cannot better exemplify the truth of the preceding statements, than by quoting the following remarkable case:—

Miss C., aged forty-two, had pretty good health up to five years ago, since which period she had not felt so strong. The catamenia had always been regular; but until lately rather under time than over, and lasted five or six days. For the last two years she had been more unwell; the period had lasted a week altogether, lingering a little for the succeeding week; recurring every three weeks or twenty-three days. This increase was due, not to clots, but to an unusual quantity of water, which obliged her to use two napkins at the same time. The function began at the age of 17 or 18. Before 22, she had had dysmenorrhœa for one day, not since.

About three years and a-half ago, on her lifting up a heavy weight, she felt something give way in her side as if she had twisted herself there; and she could not raise herself erect for the pain for a few minutes. Three years ago, while rubbing herself for the stomach-ache, she felt a round tumor in the left iliac region. Even before this she had felt some bearing down in front. There was no alteration in the breasts at the time.

The *breasts* presented no areola. There were some small follicles around, whitish; becoming whiter on tightening sideways.

The *tumor* had enlarged, because formerly she could not feel it in the erect position; while now she could. At times it was very painful; always more so before a period. She thought she could connect the enlargement with the increased catamenial flow, and the color was less dark than it was now.

On *external palpation*, there was dulness for four inches above the pubes. There was a projection half-way between the pubes and umbilicus, of the size of an apple, quite pushing forward the abdominal parietes at this point. This was rounded, and the hand could grasp it superiorly. The dulness extended on a level with this quite to the left side. On the right side, about two inches beyond the tumor, the cæcal region was clear, as well as the two lumbar regions. All the dull parts were hard to the feel. The central projection was, however, movable upon the growth below it. It could be moved on the right side, quite near to Poupart's ligament; on the left side, only half

an inch. In either case, when so stretched, tight bands might be felt uniting it to the posterior growth.

Auscultation.—On the front of the first growth, extending to the right side, there was quite a musical murmur, with a thrill, ceasing on deep inspiration. Over the projection superiorly, there was no sound; just below it, however, and over the pubes, there was distinct *tubular* souffle. There was a less loud sound on the left part of the posterior growth, and *vesicular*.

Vaginal and Rectal Examination.—The os was small, high up behind the pubes; the lips were small. The whole pelvic cavity behind the vagina was filled by a large, hard mass, smooth, somewhat lobulated; at the lower part, it was semi-elastic. Cystic sounding proved that the bladder was rather to the right side. The uterine sound penetrated to its normal length; and anteverted uterus, and turned rather to the right side. The finger in the rectum detected the tumor between it and the vagina, in the posterior *cul-de-sac*.

The *Vaginoscope* gave no indication of murmur. An exploratory puncture made at the inferior portion gave exit to about half an ounce of serum. This proved to be so on microsopical examination. The puncture afterwards bled freely; but the bleeding was arrested by the actual cautery.

The diagnosis was, exra-uterine fibrous tumor, with a pedicle attached to the posterior wall of the uterus, inferiorly infiltrated with serum.—*British Medical Journal, May* 28, 1864, *p.* 579.

ON THE TREATMENT OF FIBROUS TUMOURS OF THE UTERUS.

By Dr. C. H. F. ROUTH, Physician to the Samaritan Hospital for Women and Children.

[The surgical treatment of Fibrous Tumours of the Uterus is of two kinds: 1. Enucleation of the Tumours. 2. Removal of the tumour by gastrotomy. Enucleation may be primary where it is completed at the time or within a day or two, or it may be effected by inducing gangrene or death of the tumour by sloughing. In 1857, Mr. Hutchinson published some papers on this subject. (*Retrospect*, vol. xxxvi., p. 241.)

The principal rules laid down by Mr. Hutchinson are: "1. The tumour must be well depressed into the pelvis by an assistant. 2. The first incisions must be very free, and pass deeply

down into the tumour; thus not only completely dividing the capsule, but facilitating its bisection, should that afterwards be found requisite. 3. The opened capsule must be separated by the fingers, or, if needful, by blunt-pointed scissors, the finger being used as a director. Strong and large vulsella, with midwifery forceps, should be at hand, to be used for traction, if necessary. 4. The grand object is to draw down, after separation of the tumour, the uterus inverted with the tumour to the external parts, or as near as possible to them, which facilitates the operation. 5. After eversion has been completed, an examination should be made with the finger, also *per rectum*, &c., so as not to cut through an inverted pouch of peritoneum in separating the final attachments of the uterine tumour. 6. The uterus is then returned. Ice, ergot, stimuli, &c., are to be given as indicated by the symptoms."

The views here epitomised are so very much in accordance with common sense and sound surgery that I do not wish as a whole to controvert them. To one point only of these I would take exception. I do not believe that the grand object is to draw down the inverted uterus after separating the tumour, so as to bring the tumour as near as possible to the external parts, because this renders the operation easier.

It cannot be doubted that simple traction of the uterus will often suffice to determine inflammation in and about the peritoneum around the organ. In the fatal cases of enucleation, death seems to have been due to phlebitis or peritonitis. Upon this practical point we can learn a lesson from the experience of practitioners in the removal of *polypi*, as a rule, a far easier operation if the uterus be pulled down.

One case is mentioned by M. Gaubrie (*Bull. de la Soc. Anat.*, vol. xvii., p. 209) where a polypus, supposed to be attached to the cervix (but found after death to be attached to the fundus), was pulled down forcibly. The pedicle yielded and it came away; yet that patient died from latent peritonitis. After death, the uterus was found healthy; but pus was found in the pelvis. Another case is mentioned by M. Demeaux (*Ibid.*, vol. xviii., p. 41) in which an enormous polypoid growth filled the cavity of the uterus. It was pulled down to the vulva, removed, and the parts replaced. There was no bleeding. Peritonitis followed and death two days subsequently. The *post mortem* examination revealed pus in the pelvic cavity. No uterus could be found in the pelvis; but a puckering and a sunken-in portion, within which the ovaries and a vaginal tumour, which was the inverted uterus, were found. This inversion, it is true, was

supposed to have been the result of the weighty polypoid growth before traction had been employed. Yet death from peritonitis was the result of the operation. A more remarkable case, however, is quoted by M. Pigné (*Ibid.*, vol. xiv., p. 11). This was a polypus as large as a fist, which was taken from a dead woman. During life an attempt was made to remove it; but the finger being first introduced within the rectum, no uterus could be felt. All extraction was now stopped, on the supposition that the tumour was an inverted uterus. Peritonitis and death followed. The *post mortem* examination revealed a pediculated polypus within a very small and anteverted uterus. No injury whatever of the peritoreum had taken place. The traction alone produced the peritonitis. Dr. Greenhalgh has informed me of a case which he saw at Würzburg, where the mere traction of the uterus downwards produced peritonitis and death.

In the recorded cases of enucleation, where traction is mentioned particularly as having been made, the results may be referred to two heads; viz., where the uterus or the tumour was pulled down by fingers, a string, or other violent means; and, secondly, where this was done by forceps. The result in the two cases is very different. Of eight cases, in all but two of which the operation was that of primary enucleation—one being secondary, the other failing altogether—in three, the uterus was for the time completely inverted. Three cases died; in one of these, eversion had occurred; in another, forcible attempts were made to pull down the uterus, which failed.

In eight other cases, in all of which but one (where the operation failed, although the tumour sloughed away afterwards) the operation was primary enucleation, and the forceps were used, no deaths occurred. In two, the uterus was inverted. In two cases, it was the uterus which is stated to have been pulled down by the forceps. In the remaining six, it was the tumour which was so drawn down. All did well, except one patient, who had phlegmasia, and whose convalescence was not established till two months. All the tumours, however, where it is stated, were small; except in the patient who had phlegmasia, where it was large; and in another, where the tumour weighed eighteen ounces, and the diameters were four inches by six.

Was this difference in the result due to the better regulated traction which can be exerted by a forceps, or to the better direction given by it? Probably, where the forceps were used, the tumours were low down in the true pelvis, and so easily included in them. Short forceps were used in every case; and,

therefore, it would seem that the traction was less forcible. Whenever these were used, the results were more satisfactory. The fact is indubitable. Still it seems difficult to say to what cause the occurrence of peritonitis is due, where it so occurs; when we know that in very many other cases where traction is employed it does not occur.

In explanation, I have but three suggestions to make. In cases of retroversion, I have never seen peritonitis follow traction to restore the organ to a straight direction, so as to allow the admission of the sound. Is it because in these cases the peritoneum is no longer in its normal state, already changed by the very unusual disturbances to which it has for some time past been subject? This is certainly true in many cases of ovariotomy, where numerous adhesions exist. Secondly, peritonitis, and accidents of like nature, are rare, if our patients have been well purged and prepared by remedies before operation; a precaution, which, in the case of polypoid growths, is often neglected. Will this explain the difference? Thirdly, there is doubtless, in some cases, idiosyncracy and a predisposition to peritonitis.

The practical conclusion, at any rate, to be deduced is, that the very traction which is necessary in these cases is often in itself a source of danger and a cause of death; and, therefore, if possible, it should be avoided.

Enucleation by the Induction of Gangrene, or *Secondary Enucleation*, as it is called, is a much more tedious operation. Out of fifteen cases mentioned by Mr. Hutchinson, nine recovered, or 60 per cent.; and six died, or 40 per cent. In my table, of ten cases, in one the result was not stated. Of the remaining nine, four died, or 44.4 per cent.; and five recovered, or 55.6 per cent.

Mr. Hutchinson has concluded that, if other unpublished cases were taken into account, the results of the two modes of operation would be identical. The above figures, however, so far as they go, prove that enucleation by the induction of gangrene is positively less fatal than primary enucleation. Is this due to the traction which is employed being less marked?

The modes in which this operation has been practised have been various. The French method consists in using the knife, in most cases without the use of ergot at all. Dr. Atlee's consists in using, in the first place, ergot in repeated doses, so as to influence the uterus to contract and forcibly eject the tumour. Then the incision is made through the capsule, the ergot being continued, and the tumour gradually separated from the cyst

by the finger, cutting, by the knife or scissors, any adhesions which may interfere with such separation. This is continued from time to time; the tumour in the meanwhile sphacelates and comes out by pieces, until the whole has come away, or what remains is capable of enucleation and removal. There can be no doubt that Dr. Atlee's method is an improvement upon that of the French school. It provides a *vis a tergo* to assist the operator.

Again, Dr. Atlee does not limit his operation of enucleation to the *uterus*. In several cases where, from the size of the tumour or its position low down in the pelvis, while the uterus is high up or difficult to reach, and in cases of extrauterine fibroid, which occupies, similarly a true pelvic position, he does not hesitate to cut right through the *vagina*, so enucleating the tumour. This he performed in several cases; and, so far as I know, he was the first to attempt this mode of procedure.

In estimating the degree of mortality due to enucleation by the induction of gangrene, we learn again a lesson from what occurs in some cases of polypi, which are tied and allowed to slough away.

The experience of Drs. Robert Lee and M'Clintock gives the following numerical results of cases in which the ligature was applied:—

	Cases.	Deaths.	Per Cent.
Dr. Robert Lee	20	9	45
Dr. M'Clintock	10	3	30
	30	12	40

And, no doubt, with a large sloughing mass in the vagina, exposed to the air and putrefaction, the absorption of putrid pus is a natural result. The same is true with regard to the fibroid within its cyst, only to a greater degree. In the case of polypus, we have merely mucous membrane, which is our absorptive surface. In the case of the enucleated fibroid, we have a raw ulcerated surface of the cyst, that part which is the vascular part of the tumour, and therefore eminently absorptive, ready to take into the system the vitiated pus. The surprise is that, in such cases recovery ever occurs. Fortunately, the *vis medicatrix naturæ* is often powerful enough to accomplish it. It is for this reason that I think Mr. Brown overrates the beneficial results of this modification in the operation, in first incising the os and allowing it to heal before he proceeds to gouging or enucleation. It is of use, doubtless, as it removes one additional source of absorption; but others remain.

The practical lesson which is taught by these remarks, is the

necessity of frequent injections and washing with disinfectants, and obviating the production and long contiguity with ulcerated surfaces of effete and putrid matters.

Enucleation by Gouging, and inducing gangrene subsequently, is a modification of Mr. Brown's.

The instrument which he uses I now show you. It has already been exhibited before this society, and, therefore, need scarcely detain us long. It was originally devised by Mr. Philip Harper. It consists of a hollow tube of steel with cutting knives. Contained in this tube is a hook, which can be pushed up by a spring, and thus grasps the tumour, whilst circular knives are carried through by means of a screw. In this way, a piece can be actually cut out of a tumour much in the same way as the central piece is cored out of an apple.

In the *Obstetrical Transactions*, Mr. Brown has published several cases exemplifying this mode of treatment. I may remark, however, that it is restricted by him to *intrauterine fibrous tumours of the non-pedunculated form*, growing from the inside of the uterus from a broad base. Mr. Brown has given us four cases in which he gouged in this manner. In three, a cure followed; but in one, the operation led to a fatal result. This death he attributes to the absorption of putrid pus through the cut edges of the cervex, which was previously laid open to expose the contained tumours. Hence, at present, his mode is in the first place to lay open the cervex, and to wait two or three days or longer, till this has healed, before he proceeds to gouge.

The method pursued after the gouging, is to plug up the hole thus made by oiled lint, to arrest hemorrhage and provoke sloughing of the tumour.

In three of his published cases, however, the tumours were not gouged. In one, the tumour was broken up by a pair of sharp scissors.

I may say that through the kindness of Mr. Brown, (who has given me the notes of several of his cases, even hitherto unpublished), I know of two more examples in which, after the incision of the os, the tumour was broken up by scissors; in all of which recovery, in one case disappearance of the tumour, followed.

But a method which is likely to supersede in great measure these more bloody operations, is simple incision of the os, subsequently carried right through a portion of the tumour.

A published case of Mr. Brown, given in the *Obstetrical Transactions*, (vol. iii., p. 76,) is, however, peculiarly interest-

ing, as the cure was open to ocular inspection, a piece of good fortune not always met with.

This was the case of a single woman, in whom, some seven years previously, he had removed from the os uteri a fibrous growth of about the size of a walnut; and in whom, at the time of the second operation, he had distinctly made out three fibrous tumours just within the os and projecting into the vagina. The os and cervix were freely cut open; and then each of these tumours was deeply cut into; the cut surfaces being dressed with oiled lint, and the vagina plugged. All these dressings were removed in forty-eight hours, and the vagina daily injected. A month afterwards, two out of the three growths had entirely disappeared, and the third was reduced to half its size.

In two other unpublished cases furnished to me by Mr. Brown, the same result was as conclusively observed. I do not dwell on these, because they are as yet unpublished. Altogether, he has mentioned to me ten cases in which this simple plan of incision of the external os was practised with the best results. As these are, however, only a few among several which will shortly be made public, I only ask you to wait and judge for yourselves.

Here we have, then, a practical lesson taught us. The mere incision will suffice to cause the absorption of the tumour. It is a lesson thus taught, from which Mr. Brown appears himself to have profited, as I now learn that in most cases he no longer gouges, but makes free incisions. The plan is safer. Sloughing in the tumour is thus set up, and this is disintegrated, and diminishes in size, and finally disappears.—*British Medical Journal, July* 16, 1864, *p.* 53.

Book Notices.

Lectures on Surgical Pathology, delivered at the Royal College of Surgeons of England. By James Paget, F.R.S., Surgeon Extraordinary to her Majesty the Queen, &c., &c. Revised and edited by William Turner, M.B., Lond., F.R.C.S.E., F.R.S.E., &c. Third American Edition. Philadelphia: Lindsay & Blakiston. 1865.

This is a full-sized octavo volume of 737 pages, printed on good paper, fair type, and bound in cloth. It is a new edition

of a very valuable work, but which has been so long before the profession, that its merits are already extensively appreciated. It contains thirty-six lectures on the general subjects of nutrition, healthy and morbid; reparation of injuries, wounds, &c.; inflammation, its products and consequences; tumors and morbid growths; and tubercle. The work is illustrated by 117 woodcuts. It is a work worthy of the careful study of every physician and surgeon.

For sale by S. C. Griggs & Co., 41 Lake Street, Chicago.

The Pharmaceutists' and Druggists' Practical Receipt-Book, with a Glossary of Medical Terms, and Copious Index. By Thomas F. Branston. Philadelphia: Lindsay & Blakiston. 1865.

This is a duodecimo volume of 307 pages. Its contents are well indicated by its title: it being made up of recipes, formulas, explanations of terms, &c. The subjects are conveniently arranged in alphabetical order, and the book is altogether a convenient one for reference, both by physicians and druggists.

For sale by S. C. Griggs & Co., 41 Lake Street, Chicago.

History of a Case of Partial Reconstruction of the Face. By Gurdon Buck, M.D., Surgeon to the New York Hospital, St. Luke's Hospital, &c. &c. Reprinted by permission, from the Transactions of the New York State Medical Society.

This is a pamphlet of 16 pages, to which are added six or seven photographic plates. It gives an account of one of the most successful efforts to repair an extensive injury of the face, that is to be found in our surgical literature. We would copy it entire, but much of its value and interest would be lost without the accompanying plates.

Ninth Biennial Report of the Officers of the Illinois State Hospital for the Insane.

We have just received this official document, in regard to one of our most important institutions. It affords evidence that the State Hospital for the Insane has been well managed in all its departments. In a hasty perusal of the Superintendent's report, we find many facts and observations of interest and importance. The following table will show the number of patients

treated in the institution, and the results, during the last two years:—

Number of patients in the hospital Dec. 1, 1862	302	
Number since admitted	408	
Whole number treated since Dec. 1, 1862		710
Discharged, recovered	159	
Discharged, unrecovered, by order of Trustees	133	
Discharged, unrecovered, by mutual consent of Superintendent and committing parties	48	
Discharged, unrecovered, but improved	14	
Eloped	13	
Died	42	
Total vacancies created		409
Remaining Dec 1, 1864		301

On the important subject of improper commitments, and unjust detentions of patients in asylums, he makes the following quotations from the report of a Commission of Lunacy in Massachusetts. They show that the suspicions often entertained by some in the community on this subject, have little or no foundation, in fact:—

In allusion to the whole question of wrongful commitments, the language of the commissioners is as follows:—

"With reference to the above points, the commissioners would frankly acknowledge that no such case of clearly wrongful confinement, in a hospital, has been brought to their notice, and but a single instance of wrongful admission. This was at the instance of a Judge of Probate, and was discharged at once by the superintendent, upon learning the facts of the case."

In regard to the question, "Shall the internal management of hospitals be regulated by special statute?" the committee lays down the following dicta:—

"The interior management of hospitals, and the treatment of the insane, cannot be regulated by law. It would be as absurd and futile to attempt, by statute, to regulate the minute and subtle details of mental hygiene and therapeutics in our hospitals, as it would be to legislate how physicians should treat fever, or how, or when, a surgeon should amputate a case of gangrene, or, even, to place on the statute book laws, with penalties, for guiding the practice of a shipmaster when in peril of

shipwreck, with hundreds of alarmed passengers dependent for safety on his free will, cool head, and skilful hand. The entire management and treatment of the insane must be confided to the humanity and skill of the superintendent. His authority must be personal. There can be no divided responsibility in the medical treatment of the insane."

The following conclusions of the committee are full of value, and corroborate the views of those most conversant with good and bad influences upon the insane.

"A number of cases have been brought to the notice of the commission, where the unadvised visits of friends have recalled feelings and associations of which time and change of circumstances had effected the removal, and when a continuance of the same system might, if uninterfered with, have led to a permanent cure. The first condition of restoration is, that the patient be separated from all the scenes, ideas, and associations amid which, or out of which, his insanity arose, and which tend to keep up his delusions, excitements, or depressions. The faithful physician avoids even allusion to these. He discourages conversation upon them, and yet the patient's proclivity is towards them, and he will talk about them if he can find any one to listen to him. But he prefers to write to his friends, for he can talk to them though absent. His letters, therefore, excite him, and keep him in a morbid state of mind. Under such circumstances, the trustworthy manager of the insane discourages the practice, in the early stages of treatment, and until he sees it can be done without detriment to the patient's health."

On the very important subject of giving testimony in courts, as a medical expert, he introduces the following very important suggestion, which *ought* to be acted upon by the State Legislatures, without unnecessary delay:—

The author just quoted, has in a spirit of returning candor, very clearly stated the very remedy which those who suffer, in rendering testimony under the present state of things have long desired.

"There must be," he says, "something fatally defective in our mode of obtaining and applying this class of testimony. For it cannot be supposed that, under proper regulations, there could be any difficulty in obtaining reliable scientific evidence, if the proper methods were resorted to. And it seems to us that some mode should be devised whereby the motive which is now offered to this class of witnesses to testify so exclusively

for one side, should be not only counteracted, but that it should be entirely removed and a contrary motive, for impartiality, presented. We mean no impeachment of this class of witnesses; but any man when approached by the counsel of one party, and furnished only with the views and facts of one side, and asked to give his opinion, naturally gives a one-sided opinion. And, having committed himself to one side, he is thereafter rendered incapable of forming a fair and unbiased judgment upon the facts. He becomes disqualified to act as a juror in the case. And when it is considered that his testimony is given to instruct, educate, and inform the court and jury, in regard to the proper mode of determining the case, and that it is no uncommon occurrence for a case to turn very much upon the scientific and professional testimony, it is no less important that the experts should be wholly uncommitted in opinion, than that the jurors should be so. It seems very obvious, therefore, that this class of witnesses should be selected by the court, and that this should be done wholly independent of any nomination, recommendation, or interference of the parties, as much so, to all intents and purposes, as are the jurors. To this end, therefore, should the compensation of scientific experts be fixed by statute, or by the court, and paid out of the public treasury, and either charged to the expense of the trial, or part of the costs of the cause, or not, as the Legislature should deem the wisest policy. The mere expense of the experts, when selected in this mode, would be as nothing in comparison with the expense which now becomes unavoidable, in consequence of the enormous consumption of time in most of the trials of this class."

The undersigned would respectfully urge, in view of the unquestionable propriety of this measure of reform, that the Legislature be requested to amend sec. 16 of the act of Feb. 15, 1851, (which, in part, establishes the relation of the Superintendent of this institution to the courts of the State,) in the manner above indicated; or, else, to make complete the power, now in part existing, of being beyond the reach of any subpœna which would impress his services as an *expert*.

Sour Milk to Irritable Ulcers.—Dr. Bélin, of l'Assomption, tells us that he has been in the habit, for many years, of treating old inflamed ulcers, and those with exuberant granulations, by means of cold poultices of coagulated milk kept constantly to the part, and renewed several times a day. He says that he has often found them speedily to reduce inflammation, and heal ulcers that have resisted every other mode of treatment for months.

Editorial.

VACCINATION REPORT.—The report on Vaccination, &c., in the original department of this number of the EXAMINER, was prepared by the Committee, and a printed copy sent simultaneously to all the medical periodicals of the country, with a request to give its facts as wide a circulation as possible. We not only give it a prominent place in the EXAMINER, but we hope it will be read, and its important suggestions acted upon by all our readers.

SUMMER MEDICAL INSTRUCTION.—The Summer Reading and Clinical Course of Instruction in the Chicago Medical College, is progressing regularly, with an interesting class of students in attendance.

OBITUARY.—DAVID RUTTER, M.D., of this city, died on the evening of the 16th of April, 1865, aged 65 years. He was attacked suddenly with apoplexy, about 9 o'clock P.M., and died in three or four hours. We copy the following account from one of the daily papers of this city:—

One of the oldest and most esteemed citizens of Chicago, Dr. David Rutter, was yesterday (April 20th) borne to the silent grave. In the death of this venerable and much respected gentleman, Chicago has lost one of its most worthy citizens, the medical profession one of its leading ornaments, and the bereaved family a kind husband and indulgent parent.

Dr. David Rutter was probably the oldest medical practitioner in the city, and no man stood more deservedly high in the estimation of the members of his profession. He was a native of Philadelphia, and lived in that city until his removal to this city, about sixteen years ago. In Philadelphia, he was intimately associated with the most prominent and eminent members of the medical profession, and no one was more beloved and admired. His well-earned reputation in the East at once brought him into an extensive practice upon his removal to Chicago; and his kindness, skill, and ability, quickly won for him here hosts of devoted friends.

A meeting of the members of the medical profession was held

yesterday afternoon, in room No. 5, court-house, for the purpose of taking action relative to the decease of Dr. Rutter, and adopting resolutions expressive of their loss and sorrow. A large number of gentlemen were present. Dr. N. S. Davis was called to the chair, Dr. Brock McVickar was chosen secretary.

Upon taking the chair, Dr. Davis stated the object of the meeting, and, in a few well-chosen remarks, paid a high tribute to the name and memory of the deceased. Upon this sad occasion, he said, of uniting to take suitable action in relation to the death of one of their number, he felt constrained by a sense of duty, as well as by a feeling of pleasure, to give testimony to the worth and purity of the deceased. Little, however, need to be said relative to his talent, virtue, and ability, which were so well known to his brothers of the profession. Dr. Rutter was one of the oldest, most esteemed, and best beloved among them, with a mind acute, active, and enlarged by liberal study, a heart kind and sympathetic, and a disposition genial and forgiving. He had been always studiously observant of the rules and etiquette of the profession, and universally courteous to all.

In his lectures to the students at college, Dr. Rutter had never failed to inculcate the most exalted lessons of morality, while giving invaluable professional instruction. Dr. Davis concluded his remarks by expressing his deep sympathy for the grief-stricken family of the deceased.

The following gentlemen were then appointed a committee to draft resolutions expressive of the sense of the meeting, upon the sad occasion:—Dr. C. G. Smith, Dr. B. McVickar, and Dr. J. W. Freer.

After a short absence, the committee reported the following resolutions, which were unanimously adopted:—

Resolved, That as members of the medical profession of the City of Chicago, we desire to express our sense of the bereavement which we have suffered, socially and professionally, in the decease of our esteemed friend and colleague, Dr. David Rutter. That in his death we mourn the loss of a counsellor, wise from his ripe experience and long devotion to the duties of his profession; a friend whose precepts and whose principles we have always revered and admired, and whom we shall always cherish deeply in our memories as the wise physician, the true and steadfast friend, and noble Christian gentleman.

Resolved, That the shock which he received, and which caused his sudden death, when he learned the fate of our lamented President, is a testimony to his loyalty and love of country which words are powerless to express.

Resolved, That we sympathize with the friends and family of our deceased friend in their irreparable loss. He was to them a devoted husband and father, and around him clustered all the affections of a young and growing family, whose loss cannot be made up to them, and whose grief time only can assuage.

Resolved, That a copy of the foregoing resolutions be sent to the family of the deceased.

The meeting then adjourned.

Epidemic of Plague in St. Petersburg, Russia.—As the rise and progress of all severe epidemics are subjects of interest to intelligent medical men, we make no apology for copying the following from two secular London papers. For, though the statements of such papers are seldom correct or reliable in regard to medical matters, and especially in regard to the prevalence of diseases, yet they are sufficient to indicate the fact that a severe epidemic disease is prevailing in the capital and other parts of Russia, and Northern Europe. It is undoubtedly, as suggested by Dr. Murchison, of London, a form or modification of typhus. We think this latter disease has been increasing in most of the great commercial cities of the world for the last three years. The newspaper accounts are as follows:—

"An epidemic, resembling in its fatality the Asiatic cholera, has for some months devastated the interior of Russia. Apparently taking its origin in Siberia, it has gradually swept down southward, spreading more widely on either side as it advances. As yet it has completely baffled the skill of the Russian physicians, and of those professors of medicine who have proceeded from Germany to study its symptoms. In many respects this epidemic resembles the celebrated plague of Athens, which decimated Attica in the second and third years of the Peloponnessian war. Like it, the epidemic belongs to the class of eruptive typhoid disorders. The person seized immediately despairs of recovery; he loses memory and hope together. Like it, too, the Siberian fever is accompanied generally by a hoarse cough and violent retching, and the victim seldom survives beyond the ninth day. There is some difficulty in obtaining a reliable account of the disease, for the Russian officials, never very communicative, have endeavored to conceal the existence of the disease. But it has touched one or two towns in Austria and Prussia, and rages at St. Petersburg. The deaths in the latter

city are acknowledged to amount to eighty or one hundred per day, but it is suspected they are five times as numerous. The disease is said to have assumed a mitigated form in Germany, but very great alarm prevails throughout the continent. Men hoped that with the Asiatic cholera the last great scourge of the human race had passed away, but they suddenly find themselves confronting a pestilence which advances as rapidly as a prairie conflagration, floating on the rivers, and borne on the air. Apprehension, too, as in the case of the Asiatic cholera, predisposes to the disease.

A plague of this description, raging in St. Petersburg, cannot be long absent from other European capitals. It marches steadily and surely. Already its route is traced by death and mourning, and its future track has been pointed out. In such a case quarantine regulations are nearly useless. No plague was ever yet kept away from our shores by delaying a ship from an infected port at a distance from the harbor. The fever may be conveyed in a letter, a bale of goods, a waif, or straw from the ship wafted to the shores. It may be taken up by the wind passing over the deck, and be borne mysteriously, despite of all precautions, to the crowded town. Physicians may dispute whether it is infectious or contagious. Such discussions may be interesting to the professor, but the practical truth is, that whether a plague be conveyed by the air or by contact, there is no means of staying its progress to any land to which it may be the will of Providence to visit with such a scourge." —*Liverpool Post.*

"Terrible Extent of the Ravages of the Disease.—The total number of cases has reached ten thousand, of deaths two thousand, and the average number of cases is one hundred a day. No less than forty physicians are reported dead, though whether they have fallen victims to the disease is not stated. The account which the correspondent gives of the disease itself, is that 'it is not cholera, but plague, with dilated pupils, carbuncles, and pestilential bubo.' Dr. Charles Murchison, physician to the London Fever Hospital, expresses, in a letter to the *Times*, his opinion that the malady is 'relapsing fever,' which, under different designations, has been well known in Britain and Ireland for nearly two centuries, which constituted a great part of the Irish epidemic of 1847, and which about the same time was very prevalent in various parts of Germany. The mortality from relapsing fever is not great, only three per cent, but Dr. Murchison shows that all epidemics of such fevers have coexisted with typhus, in which the mortality is twenty

per cent. The public, he says, need be under little apprehension as to the importation of the Russian epidemic into England. The more formidable of the two diseases composing it is here already, and has, for the last three years been very prevalent among the poor of London."—*St. Petersburg Telegram to the London Times.*

BERLIN, April 7.

Authentic intelligence touching the Russian epidemic, states that three several maladies exist at the same time in St. Petersburg. In October last, *meningitis spinalis* appeared at St. Petersburg. This a spasmodic affection of the brain and spinal cord, by which children are chiefly attacked; the mortality was from twenty to fifty per cent. In November, typhus was added to the first-mentioned disease, occurring sporadically at first, and gradually developed into a malignant species of *febris recurrens*. The fever lasts a week at a time, the several attacks being separated by intervals as long. During these intervals the health is apparently so good that people have been dismissed from hospital who died soon after. A special committee has been formed, under Gov.-Gen. Suwaroff, to look after those apparently cured. On a second or third attack there is a general collapse, decomposition of blood, and paralysis. Quinine and stimulants have no effect. The deaths, at first but twenty, have risen to forty per cent. The spleen and liver are much affected. In many cases epidemical inflammation of the spleen, or *postula maligna*, has been observed. Quite recently the Siberian plague has broken out also. Of this, seventy per cent die within a few hours. A strong disposition to vomit, which cannot be satisfied, a swelling of the belly, pestilential carbuncles, and dark color of the skin, are its unmistakable symptoms. It is the "black death." St. Petersburg papers deny the existence of the plague in the capital, but the official *Northern Post* states it to have broken out at Szaniewo, in the Waldai Hills, and the description given in the St. Petersburg official *Medical News* and *Exchange News*, in which the dilation of the pupils is especially dwelt upon, shows the malady, in its present stage, greatly to resemble the plague. In many cases, indeed, it is difficult to distinguish plague from *febris recurrens*, at the time when typhoid epidemics are abroad. The disease is apparently on the decrease. Dr. Erichson, surgeon to the Emperor Nicholas, aged seventy-five, died while attending hospital. In Poland also, an epidemic has broken out. One case at Kole, near Warsaw, is represented in the *Warsaw Gazette* as *meningitis spinalis*. Out of five thousand inhabitants in that town,

there are thirty-six sick and fifteen dead. In Eastern Prussia, there are many cases of *meningitis* near Dantzic.—*Correspondence of the London Times.*

American Medical Association.—The American Medical Association will hold its Sixteenth Annual Meeting in the City of Boston, on Tuesday, June 6th, 1865.

The following Committees are expected to report:—

On Insanity—Dr. H. R. Storer, Mass., Chairman.

On Exsection and its connection with Conservative Surgery—Dr. Lewis A. Sayres, N. Y., Chairman.

On Drainage and Sewerage of Large Cities, and their Influence on Public Health—Dr. W. J. C. Duhamel, D. C., Chairman.

On Alcohol and its Relations to Man—Dr. G. E. Morgan, Maryland, Chairman.

On Quarantine—Dr. Wilson Jewell, Penn., Chairman.

On Medical Ethics—Dr. John A. Murphy, Ohio, Chairman.

On the Microscope—Dr. James M. Corse, Penn., Chairman.

On the Relations which Electricity sustains to the Causes of Disease—Dr. Squire Littell, Penn., Chairman.

On the Morbid and Therapeutic Effects of Mental and Moral Influences—Dr. A. B. Palmer, Mich., Chairman.

On the Causes of the Extinction of the Aboriginal Races of America—Dr. Geo. V. Suckley, Md., Chairman.

On the Causes and Treatment of Ununited Fractures—Dr. Frank H. Hamilton, N. Y., Chairman.

On Diphtheria—Dr. Lucius Clark, Ill., Chairman.

On the Uses and Abuses of Pessaries—Dr. James P. White, N. Y., Chairman.

On International Medical Ethics—Dr. J. Baxter Upham, Mass., Chairman.

On Climatology and Epidemic Diseases—Dr. C. W. Parsons, R. I., Chairman.

On Autopsies in Relation to Medical Jurisprudence—Dr. T. C. Finnell, N. Y., Chairman.

On so-called Spotted Fever—Dr. James J. Levick, Penn., Chairman.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Dr. A. Nelson Bell, N. Y., Chairman.

On Patent Rights and Medical Men—Dr. David Prince, Ill., Chairman.

On Revision of Plan of Organization—Dr. N. S. Davis, Ill., Chairman.

On Specialists—Dr. J. Homberger, N. Y., Chairman.

On Compulsory Vaccination—Dr. A. N. Bell, N. Y., Chairman.

On Rank of Medical Corps in the Army—Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy—Dr. T. L. Smith, N. Y., Chairman.

WM. B. ATKINSON, *Permanent Secretary.*

ŒSOPHAGISM.—As an example of the nervous condition termed œsophagism, M. Nélaton, some time ago, called the attention of his class to a man of vigorous temperament, 35 years of age, and in good health, who came to the hospital under the idea that he had a foreign body in the œsophagus. A fortnight previously, while picking his teeth with a thin piece of wood, he was suddenly spoken to. His attention was turned away for an instant, and at the moment he was about to make a reply, he perceived a perfect sensation of a foreign body on the left side of the pharynx. A practitioner who was at once called in, recognized the foreign body at the spot indicated, and made some vain attempts to extract it. Extremely little pain followed, but as this afterwards increased, he came to the hospital. M. Nélaton suspected from the narrative, that no foreign body existed; and observed, that not unfrequently an unpractised finger mistakes the upper edge of the coenu of the hyoid bone for the body supposed to have been swallowed. Usually these nervous symptoms disappear at the end of three months, under suitable general treatment; but M. Nélaton referred to a case in which they manifested much greater tenacity. A lady, about six months since, being about to drink some water sweetened with syrup, not liking the appearance of the latter, placed a single drop on the tip of her tongue, and discovered it to be a solution of potass. Immediately, and notwithstanding that the drop had never been swallowed, she perceived a pain at the lateral part of the pharynx, accompanied by an impossibility of swallowing. The pain diminished, but so difficult did deglutition continue to be, that the patient required an hour to swallow a simple cup of broth, while the passage of the smallest solid body was absolutely impossible. It was believed that she was the subject of stricture of the œsophagus, until M. Nélaton passed down the largest bougies with great facility.—*Med-Chir. Review.*

PENNSYLVANIA HOSPITAL.—We learn that Dr. Francis G.

Smith has resigned the position of Physician to the Pennsylvania Hospital, which he has filled with so much credit. The Trustees have filled the vacancy thus caused, by the appointment of Dr. J. M. DaCosta, the very best selection that they could have made. On being elected to this position, Dr. DaCosta at once severed his connection with the Philadelphia Hospital, where he served very acceptably for several years.—*Med. and Surg. Reporter.*

Citric Acid in Diabetes.—Dr. Bélin, of l'Assomption, informs us that he has not found any remedy to act so speedily in preventing the formation of sugar, and in lessening the amount of urine, as citric acid. He mentions one case in which a marked diminution of both occurred in three or four days, and that after a few weeks scarcely a trace of sugar could be detected, whilst the quantity of urine voided became reduced to the normal standard. He does not, however, say that he has ever permanently cured a case with it.

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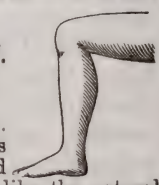

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DOUGLAS BLY, M.D., *U.S. Commissioner.*

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DR. MOTT ON ARTIFICIAL LEGS.

New York, February 10, 1860.

When the Palmer leg was invented, I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

First. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

Second. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

Third. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

Fourth. The springs are made of India-rubber, and imitate more closely the action of the muscles.

Fifth. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XVI.

PUBLIC ADDRESS TO THE MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY AND THE CITIZENS OF BLOOMINGTON, ON THE NATURE OF MEDICAL SCIENCE AND ITS RELATIONS TO THE COMMUNITY. Delivered May 2d, 1865.

By N. S. DAVIS, M.D., Chicago, Illinois.

Professional Brethren and Fellow-Citizens:

In compliance with a special request from the McLean Co. Medical Society, I rise to address you on the present occasion. To select a subject for discussion which shall be interesting and profitable, both to the profession and the community, is not an easy task. The true nature of medical science, and its relations to the welfare of civilized communities, is perhaps less understood than that of any other important department of human study. Many seem to regard it as little more than a collection of theoretical dogmas, in regard to the nature of diseases and the mode by which medicinal agents can effect a cure. Hence they often speak of *systems* of medical practice, such as the Botanic, Eclectric, Hydropathic, Homœopathic, Allopathic, &c.; thereby clearly indicating their belief in the idea that all diseases are governed by some one law or hypothetical rule; and that all remedies are to act in accordance with some corres-

pondingly general principle. Many more seem to regard all medical knowledge as a kind of intuitive mystery, capable of being acquired and understood by certain individuals, without any regard to their previous mental discipline or acquirements.

The first of these classes are easily captivated by every new theory, whether it be the simple imaginary law that "like cures like;" or the absurd reversal of all the laws of nature embodied in the *Hahnemannic* proposition that the potency of medicinal agents is increased in proportion to their dilution and attenuation. While the second are quite as likely to look with awe on the mountebank performances of the bold charlatan who claims to cure disease by a touch or a word; or to place implicit confidence in the pretensions of any ignorant man or woman who claims to cure diseases of every kind by some specific, professedly obtained from Indians, or other equally ignorant sources.

Comparatively few clearly appreciate the fact, that true medical science consists in such an extension and development of the various branches of the natural sciences, as will embrace a knowledge of the morbid or diseased conditions of living beings in addition to the healthy; and also a knowledge of the various agents capable of influencing such morbid conditions. Thus practical medicine; the art of curing or mitigating diseases; which constitutes the chief employment of the physician, rests directly upon pathology and materia medica. The first embodying a knowledge of the nature of diseases, and the second, of the particular means for their treatment.

But pathology is, itself, developed directly from an extension and combination of the facts derived from the well-known departments of natural science termed anatomy, physiology, organic and animal chemistry, and natural history; while the materia medica is equally the offspring of botany, chemistry, minerology, and natural philosophy. The art or practice of surgery is founded, if possible, still more directly upon the facts and principles of anatomy, physiology, and mechanics. Indeed, there is not a single department of natural science or philosophy that does not contribute to, or constitute a part of, medical science. Disease, instead of being a mysterious something—an

intangible essence or spirit of evil, introduced into the human system through some channel, and capable of moving from one organ to another, is simply an alteration, either in the composition or action of some part of the solids or fluids of the body. Instead of being uniform in its character, capable of being treated by some specific remedy, or in accordance with some one theoretical law of cure, it is as variable in its symptoms, tendencies, and results, as are the atmospheric, hygienic, and mental influences that surround man in civilized life. And hence, a knowledge of the nature and influences of climate, topography, season of the year, diet, drinks, and mental habits, are as essental to the enlightened physician as a knowledge of anatomy or physiology. The science and art of medicine may be defined, therefore, to be the application of the facts and principles embodied in the various departments of natural, economical, and metaphysical sciences to the elucidation, prevention, and cure of diseases.

It is, in fact, the highest development of science applied to the noblest of temporal objects, namely, the prevention and alleviation of human suffering, and the prolonging of human life. Hence, in all ages of the world, the most eminent and successful cultivators of science have been educated members of the medical profession. If such is the nature, extent, and objects of medical science, it is hardly necessary to add, that its successful study and practical application require a mind naturally capacious, evenly developed, and thoroughly disciplined by systematic exercise.

Founded, as it is, on the various departments of the physical sciences, the principles and practice of medicine derives improvements and progress from every advancement made in those departments of human knowledge. Thus the advancements in analytical and organic chemistry; the greater perfection and more extended application of the microscope, and other philosophical means of investigation, have added immensely to the domains of medical science, during the last thirty years. By combining the aid of the knife of the anatomist; the test glass and crucible of the chemist; and the magnifying glasses of the

microscopist, with the experiments of the physiologist; the relations, composition, properties, and atomic organization of every part of the human system has been fully brought to light. The same means of investigation are also directed to the examination of all the physical circumstances, whether atmospheric, terrestrial, dietetic, or social, that surround man as a social being, and which may exert an influence on his health and life. Hence the science and art of medicine has not only received great additions to its facts and appliances for the relief of human suffering, during the last half century, but it is still advancing *puri passu*, with the progress of all other departments of the natural and physical sciences. Those who cavil at our profession, often allude to the many changes in medical theories and opinions as evidence of the instability and worthlessness of our science. As well might they cavil at astronomy because the number of stars and the rules of mathematical calculations which it embraces to-day, do not correspond with those known to Copernicus in the sixteenth century; or at chemistry because the extensive works of a Lavoisieur, a Davy, a Liebig, a Henry, and a Draper, of the present century, could hardly be recognised as belonging to the same department of human learning as the vague doctrines of alchemy once taught in the renowned school of Arabia.

So long as man continues to inhabit the earth, with his living sensitive organization, exposed to the ever changing physical and mental influences that surround him in the various relations of life; and our knowledge of the nature, composition, and mode of action of these influences is capable of extension; so long will the science of medicine continue its onward progress. The truly scientific and rational physician is, in the highest sense, a student of nature. He takes the living human body, combining in its organization every principle of mechanics; every form of structure; and every manifestation of function to be found in the whole series of inferior animal organizations; and, as an anatomist, he separtes its bones, ligaments, muscles, nerves, bloodvessels, &c., noting carefully the exact relation each bears to the other; as a physiologist, he studies particularly the func-

tion or office that each part performs, and the influence it exerts on all the other parts; as a chemist, he analyzes the solids and fluids, ascertaining the ingredients of which each part is composed, and, of course, the materials necessary for its nutrition and growth; as a naturalist, he learns the laws of its development by watching the order of its growth, from the primary germ to the complex perfection of maturity, and compares each successive stage of development with the growth of corresponding parts in other species of animals, to render a knowledge of its functions more complete; as a geologist, meterologist, social and political economist, he studies the effects of soil, climate, atmospheric changes, seasons, diet, drinks, social and municipal conditions, on each and all of its several structures and functions. He thus, not only learns the laws and conditions of its life and health, but also, that in all these combined, ever acting, and yet ever varying influences, the effects of some will be exaggerated while others are deficient, thereby destroying the equilibrium or healthy standard of action in some one or more of the organs of the body. And this will constitute disease. Studying this, he soon finds that, so far from being a uniform process or morbid condition, it may be one of excitement, depression, or perversion, according to the nature and intensity of the cause, compared with the temperament of the individual patient. Thus, by the same careful examination; the same modes of study; and the same inductive reasoning, as is pursued in the cultivation of any other science, the physician gains a reliable knowledge of the causes, symptoms, and nature of diseases. He follows no more theoretical dogma, but recognizes his patient as a living, delicate, sensitive organization, constantly surrounded and acted upon by a great variety of physical and mental influences, each capable of producing its own morbid impression. Having fully appreciated, not only the existence and phenomena of diseases, but also the almost endless variety of forms and tendencies they exhibit, he next ransacks the whole fields of chemistry, botany, mineralogy, and natural history for materials capable of allaying vital action when excited; of stimulating it when enfeebled; of correcting

it when perverted, that he may become the intelligent and efficient helper and guide of nature in regaining the natural standard of action, or what we call health.

Here may be clearly seen one of the broad distinctions between true medical science and the various *pathys* or so-called special systems of medicine. The first is emphatically a study of nature, mutually receiving and imparting facts with every other department of science, and, consequently, ever advancing; while the second are simply so many arbitrary human dicta, incapable of either expansion or improvement. It matters not whether they assume the form of the obsolete Thompsonian axiom, that "heat is life, and cold is death;" or the Botanic maxim, that "vegetables growing upward tend to life, and minerals downward tend to death;" or the present more popular, but equally fallacious, expression of the Homœopath, "*similia similibus curantur;*" they are alike Procrustean beds, to which their disciples are ever vainly striving to make all the facts in nature and philosophy fit. My leading object in thus calling your attention to the true nature of medical science, is to make more apparent the relations it bears to the various important interests of civilized society. Many, I might say the vast majority of mankind, regard medical science and art as having no other object than the direct treatment of the sick. But this, though an object of great and almost sacred importance, is not the only one that should challenge the attention and enlist the cordial coöperation of every enlightened community. To cure disease, and thereby alleviate human suffering and prolong human life, is, indeed, a beneficent—a noble work. But to *prevent* both disease and suffering is more beneficent, as well as far more desirable. I do not exaggerate in saying that the latter is as legitimate a part of the objects of those engaged in the study and practice of medicine as the former. From the very nature of their studies they become familiar with the causes of disease, the modes by which they are developed, the laws governing their diffusion, and the means for preventing or neutralizing them; and, from an early period in the history of medicine, the knowledge thus acquired has been aggregated

under the head of hygiene or sanitary science, and made more or less subservient to the welfare of man. How many are there, in this or any other community, who realize the actual extent to which they are enjoying benefits derived from this department of medical knowledge? To whom is the civilized world indebted for the knowledge which has led to the widening, cleaning, and sewering of the streets of all the densely populated cities; by which the ratio of mortality has been reduced twenty-five, and, in some instances, fifty per cent? To whom is it indebted for improvements in the construction, warming, and ventilation of public and private buildings, workhouses for the poor, hospitals for the sick, asylums for the insane, and prisons for the criminal? To whom is it indebted for a knowledge of the laws governing the development and spread of contagions and infections, on which are founded all enlightened quarantine and police regulations for protection against the spread of severe and fatal diseases? To whom is it indebted for that knowledge which has led to such improvements in the preparation, preservation, and transportation of food as has banished that former scourge of the ocean, *scurvy*, from every well-regulated ship; and greatly facilitated the movements, efficiency, and comfort of armies, whether on the land or the sea? To whom is it indebted for the means of securing almost every man, woman, and child against an attack of that most dreaded of all diseases, the small-pox? For all these, and much more, the world is indebted, almost exclusively, to the cultivators of medical science; to that profession whose true votaries may be seen at midnight, as well as at noonday, not only climbing the hills, traversing the lonely prairies, and fording the streams, to administer relief to the sick, whether in the mansion of the rich or the hovel of the poor, but also in the laboratory of the chemist; the alleys, cellars, and garrets teeming with filth and infection, the very chambers of pestilence; and even the charnel-house of the dead, quietly seeking out and giving to the world that knowledge which will aid in preventing as well as curing disease.

If any of my hearers are skeptical in regard to the benefits

that have been conferred on the human race, in the prevention of disease, by that department of medical knowledge termed hygiene and sanitary science, let them compare the London of to-day with the London of the sixteenth century. Let them compare the ravages of the plague and small-pox in the sixteenth, with the effects of the same, or any other diseases, in the nineteenth century. Let them compare the mortality and suffering from scorbutic diseases on the sea, during the former with the latter period of time. Let them compare the modern asylum, or hospital for the insane, with the dungeons and prisons in which this unfortunate portion of our race were literally chained, until death relieved them of their suffering. It would set at nought the skill of the mathematician to estimate either the number of lives saved, or the amount of human suffering prevented, by the influences to which we have briefly glanced, during the last half century alone. And, yet, the knowledge actually furnished by the profession has been so imperfectly applied, both by individuals and by municipal authorities, that the beneficial results are scarcely half developed. Neither the sanitary police, nor the systems of sewerage, in the cities and densely populated districts, are what science and the happiness of the people require. In the construction of dwellings, and the physical training of children, the most important and well-known laws of health are violated daily and almost universally. It has been demonstrated that a certain number of cubic feet of atmospheric air is necessary for the maintenance of a healthy state of a single individual for a given number of hours. Yet, in the construction of dwellings, and especially of lodging-rooms, this fact is often overlooked. Not only in our cities, but all over these broad prairies, you may find in the low, garret-like chambers, bedrooms partitioned off so small, and so little ventilated, as to be incapable of supplying one-half of the air required by those sleeping in them, in order to promote full, vigorous health. Is it surprising that the inmates rise in the morning with feelings of languor, debility, mental dulness, and loss of appetite, instead of freshness and vigor? With their nervous functions depressed, and the blood impure from insuf-

ficient air, is it strange that they should frequently fall victims to typhoid and lung fevers in winter, or enteric fever and dysentery in summer? It is one of the most important and familiar facts in physiology, that the tissues of the human system can be increased in size, strength, and health, by judicious exercise, and impaired by the neglect of it; thus furnishing every parent and teacher with a reliable rule by which he may so guide the mental and physical training of children as to develope and strengthen the faculties that are small and weak, and retard the growth of those already in excess, and thereby establish that just equilibrium of development at maturity which is most conducive to health, long life, usefulness, and happiness. Yet, how often do we see the rule either entirely neglected, or its practical application reversed, both in the family and in the school; thereby keeping the community full of ill-balanced minds and unequally developed bodies, with an inexpressible amount of moral, intellectual, and physical suffering as the result. Again, medical science has long since furnished a clear distinction between food, or such substances, whether solid, fluid, or gaseous, as are capable of nourishing the various structures of the human body; and medicines or poisons which, though capable of producing certain effects on the functions of the system, are wholly incapable of nourishing, or becoming a healthy part of its structures. It has demonstrated the first to be essential as a daily supply to every individual in health; while the latter, though of great value in skilful hands, as agents for correcting morbid or diseased conditions, are necessarily disturbing and injurious if taken in a condition already normal and healthy. And yet large numbers in almost every community continue to use certain articles of this class habitually, and without any regard to sickness or health. I here refer more directly to the use of alcoholic drinks and tobacco. I am aware that large portions of the community, and even some members of the medical profession, regard these powerful agents as food, at least in a qualified sense; or, as one recent writer has styled them, "*accessory* food." But their position is neither sustained by facts nor sound reasoning. By the enlightened,

it is not claimed that either alcohol or tobacco can furnish the slightest material for actual assimilation and natural addition to the tissues; but it is claimed that their presence in the system retards those changes by which the organic atoms, already constituting a part of the tissues, are disintegrated and removed. In other words, they retard the waste of the different structures, and thereby render the supply of ordinary food less necessary—thus, indirectly, supplying the place of actual food. This reasoning is plausible, and well calculated to deceive those who have only a superficial knowledge of the phenomena of life and organization. If the atoms composing the delicate structures of the physical man had been designed by the great Architect of nature to remain stationary or permanent, from day to day, then an atom *retained* would, indeed, be equivalent to an atom *supplied*. But, instead of this, it is found that constant change is not only the normal condition of every cell and fibre of our physical structures, but that every movement or phenomenon of life is the result of change. The evolution of caloric to supply warmth; the elimination of secretions, whereby the blood is kept pure; the digestion and assimilation of food; the circulation of fluids, and the contraction of muscles, are dependent on, and accompanied by, atomic changes in the tissues. Indeed, atomic change may be regarded as the law of life, as inexorably as stassis is that of death. When the atomic changes in the tissues take place with a certain degree of rapidity, all the resulting and accompanying phenomena and functions of life are natural, and health exists. If, in this condition, any agent, whether whiskey, tobacco, or anything else, capable of retarding those changes is introduced into the system, nothing is more logically certain than that the healthy equilibrium of action will be interfered with, and an unnatural or morbid state of the system induced. Hence the idea that retarding the atomic or cellular changes in the tissues is equivalent to a supply of new atoms or cells from the assimilative processes, is simply a most mischievous fallacy. There is, however, another broad distinction between real food and mere exhilarants and narcotics. The first always satiates or imparts

the feeling of enough, while each dose of the latter only sharpens the appetite for more. Thus, the man who has eaten bread daily, is as easily and perfectly satisfied with a given quantity of it at the age of sixty as he was when weaned from his mother's breast; and so of every other article of food, whether solid, liquid, or gaseous. But who, after habitually using alcoholic drinks, or tobacco, even for a few months, was ever satiated with either? But it is no part of my present purpose to enter upon a discussion of the evil effects of either alcohol or tobacco. They are everywhere so apparent that, literally, "he who runs may read them." I simply wished to vindicate medical science from the responsibility of even an indirect endorsement of their use.

In the foregoing rapid and imperfect review of the nature, objects, and relations of medical science, it is made apparent to all, that such science, instead of being restricted in its objects to the alleviation and cure of disease, is most intimately interwoven with the social, the educational, economical, and sanitary interests of the whole civilized world. And here again comes a broad distinction between true medical science and the various special systems to which we have once before alluded. The latter are not only "Procrustean beds," to which their supporters are trying to made all the phenomena of disease fit; but they are fixed dogmas totally incapable of conducting their disciples one iota beyond the narrow sphere of treating disease itself in a specific direction. Suppose we take the so-called, fundamental principle of homœopathy, that "like cures like," and apply it to the work of sanitary improvements. Would it suggest the removal of filth, foul air, and infection, by sewers, ventilation, and antidotes, or would it require of its disciples an attempt to correct one species of infection by establishing alongside of it a small quantity of another as near like it as possible? Indeed, who ever heard of a single attempt made to improve the physical and sanitary interests of society, by the followers of any one of the empirical systems of medicine, from the days of Paracelsus to that of Hahnemann? If, however, true medical science is but a more extended development of all the physical

sciences, and the application of the facts and principles they furnish, to the great work of preventing and alleviating human suffering, thereby bringing it into the most intimate and important relations to the welfare of the whole community, it necessarily follows that certain obligations concerning it, devolve upon the community at large. For instance, it is one of their highest duties to make liberal provision for the thorough mental development and education of all who wish to devote themselves to the arduous work of *our* profession. It is more especially and imperatively their duty, and that of their representatives in the Municipal and State Legislatures, to afford the profession every possible facility for increasing its knowledge of the nature, causes, and tendencies of disease. They should do this by legalizing the study of anatomy by dissections, under proper regulations; by providing for the more frequent and thorough performance of *post mortem* examinations; by providing for the thorough observation and record of all atmospheric and climatic changes in connection with the prevalence of epidemic and endemic diseases; and by the enactment and rigid enforcement of efficient laws for the registry of all births, marriages, and deaths. By such measures the profession would be enabled, within a very few years, to add greatly to the present stock of knowledge concerning the causes of all diseases, whether ordinary or extraordinary; and also, concerning the laws governing the development, diffusion, and destruction of such causes. This would immediately bring in return corresponding improvements in the sanitary welfare and happiness of all classes of people. And, in conclusion, we ask this enlightened audience, here, in the central part of this great central State of our glorious and inseparable Union, to interest yourselves, individually and collectively, in favor of carrying these measures into practical operation. Some of them, as the legalizing of dissections, and the registry of births, marriages, and deaths, have already been adopted by New York, and several of the New England States. But the remaining ones, which are of equal, and perhaps paramount importance, are still awaiting initial action. As the people of our own State have emphatically led the way in subduing

the recent gigantic and wicked rebellion, let them also, in future, equally take the advance in those enlightened and peaceful measures, that are so directly calculated to promote the dearest and most important interests of mankind.

It is not for the benefit of the profession that I represent, that these and kindred measures are asked. Their adoption would only impose on us additional labors,—but it is for the benefit of yourselves and of your posterity. On this evening, when the whole nation is draped in mourning, for the tragic and cruel death of its late Chief Magistrate, and his earthly remains are on their way to their last resting place, I cannot take my seat without expressing my full sympathy with the national grief. Whatever differences of opinion may have existed in regard to particular measures of governmental policy, the late President was regarded, by all considerate men, as a sincere patriot and lover of his country, and the time and manner of his death will be sincerely and lastingly lamented by every virtuous mind. But let us find consolation in the hope that unholy ambition, unbridled passion, and reckless treason have reached the climax of their wickedness and crimes, and that returning peace, if it cannot restore to life our precious dead, will at least restore to our country an indissoluble union of hearts as well as States, with the same bright old star spangled banner of freedom to forever float over us.

ARTICLE XVII.

ON DIURETICS IN THE TREATMENT OF MALARIOUS OR PERIODICAL FEVERS. Read to the Meeting of the Illinois State Medical Society, May 3, 1865.

By N. WRIGHT, M.D., Chatham, Ill.

In the able report on Practical Medicine, read before the Society at its last meeting, it was very properly stated that one of the ways in which Practical Medicine might be improved, was by the new application of old remedies, more or less

known; and, by blessing of nature, having been constituted an old fogy, "seeking for the old paths, and loving the old ways," I hope it will not be considered obtrusive in me to introduce one of my old friends and valued assistants.

The physician who has practiced for any considerable time in one of our alluvial districts, has met with numerous cases of malarious origin, in their various protean forms, that defiantly refuse to yield to the usual treatment with anti-periodics. We are often called upon, again and again, to treat the same patient for a return of the "chills and fever," as they term it, until the patient, if not the physician, loses all faith in quinine, the Sampson in malarious diseases, to accomplish a cure, and restore the patient to health. The unbelief of the patient often leads him to the alternative of wearing out the disease, rather than take the medicine which his experience has demonstrated to him only checks, or gives but temporary respite from the ague, without a cure of the disease. These cases of chronic malarial poisoning are so frequent that it seems almost supererogation to enumerate their appearances. The sallow, waxen-look of the countenance; the yellow look of the conjunctiva; the torpor of the intellectual faculties; the general anæmia, and dropsy-like appearance of the patient; the hepatic, gastric, and renal disturbances, all speak to the observing physician the tale of chronic malarial poisoning.

I do not here propose to enter into any discussion as to the exact nature of *the* poison—whether it be a certain gas or gaseous compound, as affirmed by some; or by certain electrical changes in the atmosphere, as believed by others; or by hosts of spores of cryptogamic fungi in circulation through the atmosphere, as is affirmed by another class of medical men—sufficient for me and my purpose at this time, is the admitted fact, that whatever the generic poison or *casus mali* may be, its first perceptible effects are upon the nervous system, and especially upon the organic or ganglionic nerves that preside over the secretive functions. No secretion escapes the influence of the poison—the hair, skin, kidneys, all feel the polluting touch. Their secretions are changed both in quantity and quality, and

Selections.

A REPORT ON NEW REMEDIES.

By EDWARD B. STEVENS, M.D., of Cincinnati.

From the Transactions of the Ohio State Medical Society, 1864.

The present Report of your Committee on New Remedies will be mainly a continuation of the report of last year, and, therefore, will be devoted to the notice of such remedies and preparations as have been recently presented for favorable consideration: nevertheless, some general remarks in connection will not be entirely out of place.

In an editorial in the *Buffalo Medical Journal*, by Dr. Miner, we find some remarks on drugs and their use, in the treatment of diseases that are corollary to views expressed in a former report of your Committee, and showing especially that the tendency of scientific medicine in its steady progress is toward the treatment of disease with less drug medication—their proper use being rather for the assistance of the vital force in its intuitive resistance of pathological changes, and their conduct to safe terminations. We quote a brief paragraph or two expressive of those ideas:—

"Disease is almost everywhere overtreated, and nothing can be more plain, or more easily demonstrated, than this proposition. If we did not know it was true we should be glad to speak otherwise. It did appear at one time that the vagaries of Hahnneman were to be adopted in degree to prevent somewhat the injurious abuse of medicine, but even the belief that homœopathic remedies would at least do no harm has long since been dissipated with the knowledge that even the disciples of this monstrous delusion are drugged more extensively and more dangerously than any other; they are literally fed on drugs, in doses which would do honor to the chivalrous days of 'heroic practice.'

"The progress of true medical science has greatly qualified our estimate of the value of mere medicine in the treatment of disease. The sore that used to be treated with an unguent composed of twenty ingredients, heals under moist lint, when placed in proper position, or supported by the stimulus of gentle pressure. The pneumonia that used to be attacked with

heroic remedies—bleeding, antimony, and calomel—now gets well with horizontal position and small doses of Dover's powder. Inflammation even of the serous membranes, which formerly received most active medication, is now observed to terminate favorably if pain is abated, and sleep obtained by a full anodyne. The more painless, or even pleasant, a physician can make his treatment, the more he can divest it of irritating and disturbing characters, the better is it, and the greater and more acceptable is he. The chief characteristic of advancing therapeutics, is to watch the natural course of disease, to regard pathological processes only as modifications of physiological ones, with a natural tendency to terminate in harmonious and healthy action when the obstructions are overcome which these pathological processes themselves were put in action to remove. We often see in the worst forms of disease 'an effort of nature to throw off the morbific matter, and thus cure the patient.' All this is done without any detraction from the dignity and importance of the physician; he is indeed much more worthy public admiration and confidence than he who would attain no more than the same result by the most active medical warfare.

"Physicians never talked so modestly about 'curing' disease as now, and those who excel in this modesty do most toward the furtherance of this object."—*Buffalo Medical and Surgical Journal, November*, 1863.

United States Pharmacopœia.—During the past year the regular decennial revision of the *United States Pharmacopœia* has been issued, by authority of the National Convention for revising the *Pharmacopœia*, held in the City of Washington, in the year 1860. It is, of course, to be expected that with the completion of each decennial interval, the progress of medical science will bring with it many modifications in the opinion of practitioners, as to the value of remedial agents; and this last revision, while it is another evidence that our science has not yet reached a state of perfection, is also an evidence of the steady and painstaking progress we are making in this department of our profession.

A *Pharmacopœia of the United States* is not merely a series of formulæ for the best mode of presenting uniform preparations—but it is, for the time, a declaration of what the experience of the profession has decided shall be considered its standard officinal preparations.

As some evidence of the change which experience has brought in the views of practitioners, we remark that in the list of the *Materia Medica* proper, twenty-six articles have been dismissed

as useless, or so inferior as to be unworthy of a regular place as officinal articles: and from the list of officinal preparations, twenty-seven have been in like manner dismissed. On the other hand, fifty-five articles have been considered of sufficient value to be added to the *Materia Medica*, and one hundred and eleven preparations. Thete are not, however, to be now strictly regarded as *new remedies*—they are the new remedies which the experience of ten years has approved, and a large proportion were already in general use before the mere declaration of the *Pharmacopœia* had made them officinal.

Of course, we shall have next in order, and at an early date, a fresh edition of the *United States Dispensatory*, conforming to this modified *Pharmacopœia*, which will be looked for with interest by the profession.

In this connection, it is but fitting that we acknowledge the eminent services of that diligent "handmaid" of the medical profession—*Pharmacy*. In this country the plodding compounder of drugs has, within comparatively a recent period, risen rapidly to the dignity of an independent and worthy profession; in this we should sincerely rejoice, for the elevation and progress of Pharmacy represents, in an important degree, the progress of medical science. While we should systematically frown upon that villainous nondescript which continues, in a large degree, to infest our cities and large villages, who is half druggist, half doctor; who puts up pills, salves, and nostrums, bleeds, pulls teeth, and treats gonorrhœa; who fawns on the members of the profession for their prescription patronage, and sneers at them to their patients; who resorts to all scurvy tricks for a consideration; nevertheless, we say all honor to the true pharmaceutist—let us strive to draw the distinction in our esteem—and, so far as may be drawn, the distinction in our patronage.

During the past year or two, *The London Lancet* has furnished a series of articles on what the contributor is pleased to style *new remedies*. Some carefulness in the reading of these articles, inclines us to the opinion that a large amount of trash has been gathered up, with a few really valuable contributions; quite a number of remedies are taken at second-hand from the representations of eclectic and botanic practitioners of this country, who are by no means regarded with a prophet's honor at home. Others are treated of as new, which have been long known in this country, and used by all classes of practitioners, as, for example, the *phitolacca decandra* (poke root).

The several individual articles we propose to notice are too

disconnected to suggest any systematic order, we therefore take up, first:—

Substitutes for Quinia: Cinchonine.—In the series of articles we allude to, we have *cinchonine* presented as a reliable anti-periodic, in all respects equally efficacious as a remedy, though in doses one-third larger than quinine. The cinchonine has the advantages of being less bitter in taste, and much cheaper. The cinchonine is especially commended in a communication from Dr. McPherson, who has had a lengthy and extended opportunity for observation in the fevers of the East Indies. Inasmuch as the sources of the supply of quinine are becoming every year more limited, it becomes a very important inquiry to test a reliable substitute, or even a substitute which shall be reliable for many purposes. It is stated that the supply of cinchonine is both cheap and abundant.

The Swamp Ash, or Fraxinus Nigra, is offered as another substitute for the sulphate of quinia. In an article in the *Cincinnati Lancet and Observer*, for April, 1864, Dr. Denny, of Albion, Indiana, reports an experience of ten years in the use of the swamp ash. He administers the remedy in the form of a syrupy decoction or fluid ext. of the inner bark, in doses of a tablespoonful, frequently repeated during the state of apyrexia, adding a full dose of opium to the last dose of swamp ash, in anticipation of the expected paroxysm. He says, "ever since 1854, all my cases of intermittents have been thus treated, and I candidly aver it has never failed to arrest the disease." He further expresses the opinion, from his observation, that relapses of ague thus treated are less apt to return.

Phlorodzine is another remedy which has some claims to professional regard, as in some degree a substitute for quinia; as long ago as the year 1856, some favorable notices of phloridzine appeared in the medical journals; we find in the *Medical Observer*, of Cincinnati, some account of its use by physicians of that city in the treatment of intermittent disease. Dr. De Ricci revives attention to this remedy in a recent article in the *Dublin Quarterly Journal of Medical Science*, August, 1863, as follows:—

"*Phloridzine* is a neutral principle existing in considerable quantities in the bark of the root of the apple, plum, and cherry trees, but principally in the root of the apple tree. It appears in the market in the form of a dirty whitish powder, consisting of broken up, silky needles, somewhat resembling quinine which has not been well bleached, and when rubbed between the fingers it has a soft velvety feel, very like that of French chalk.

When crystallized by slow cooling from a dilute solution, previously treated with freshly prepared animal charcoal, phloridzine may be obtained perfectly white, and in the form of long silk needles. Its taste is peculiar, being bitter at first, but afterwards somewhat sweetish, with a flavor of apples. Phloridzine differs from quinine, by containing no nitrogen in its chemical composition, but in this respect it resembles salacine, to which it is much allied. Like salacine, it does not combine with acids to form salts, is very soluble in alcohol, ether, or boiling water, but requires one thousand parts of cold water for solution.

"The cases in which Dr. De Ricci has employed phloridzine with most success have been certain forms of atonic dyspepsia occurring in delicate females, to whom it was impossible to administer either bark, quinine, or salicine in any shape, without bringing on serious nervous excitement. He has also found it extremely well adapted for the treatment of young children of delicate constitutional habit, or when recovering from whooping-cough, infantine fever, or any other disease. The doses he has employed are five grains, three or four times a-day, for adults, and proportionately smaller for children. In prescribing phloridzine it must be borne in mind that it is almost insoluble in cold water, but the addition of a very small quantity of ammonia instantly dissolves it; thus by adding to an eight ounce mixture, containing a drachm of phloridzine, a few drachms of aromatic spirit of ammonia, the fluid which was previously milky becomes perfectly clear, and the addition of the aromatic spirit rather improves the mixture than otherwise. Dr. De Ricci relates the case of a young lady of a strumous constitution suffering from chlorosis, in which the effects of phloridzine were manifestly favorable. The patient was unable to take iron in any shape, and both quinine and salicine equally disagreed with her; but phloridzine agreed perfectly well, and her constitution improved so much under its use that she was subsequently able to take citrate of iron and strychnia in grain doses, which ultimately effected a perfect cure. Dr. De Ricci thus recapitulates the advantages of this drug:—

"It is tolerated in cases where neither quinine, nor salicine, nor bark can be administered with impunity.

"It is particularly adapted to young children.

"It is not expensive, thus rendering us independent of the rapidly diminishing cinchona forests of South America."

Ergot of Wheat a Substitute for Ergot of Rye.—Physicians who are in the habit of using the ergot of rye, have always ex-

perienced certain inconveniences which tend to deteriorate its actual efficacy and render its action constantly uncertain; these are particularly, the amount of poisonous resin which is contained, and the action of time and damp in rendering it absolutely inert. These objections are sought to be avoided by the substitution of ergot of *wheat* for the rye heretofore so well known. We find the following paragraph in the New York *Independent* for June 8th last: "The ergot of wheat is proposed by M. Leperdriel, of Montpellier. It is much rarer than the ergot of rye, but can be found in sufficient quantity. Its color is much the same as that of rye, but differs in shape. While the ergot of rye is fusiform, generally curved like the spur of a cock, and furrowed longitudinally with striæ of equal length, the ergot of wheat preserves the form of the grain which it replaces, is deeply cleft, and often even divided into two, sometimes into three, at its upper extremity. It has the remarkable physical property of resisting decay, and hence of preserving for a length of time its medical virtues. It can thus be kept many years without undergoing any alteration. It moreover contains 15 per cent. less of the poisonous principle of ergots, and yields 20 per cent. more of the efficacious principle." Such are the reasons which lead M. Leperdriel to prefer ergot of wheat to that of rye.

Caulophyllum Thalactroides as a parturient. In the series of articles to which we have already referred in the *London Lancet*, it is stated that the caulophyllum thalactroides, which we believe belongs to the *cohosh* family, and, therefore, may probably resemble the cimcifuga racemosa, is a parturient of more decided reliable efficacy than the ergot. Its mode of administration and dose is not given, but we suppose should be given as an infusion, or what would be better, as a fluid extract, of which ℥ss to ℥j would be a proper dose.

Liquor Bismuthi.—Most practitioners agree in opinion as to the special value of bismuth in painful affections of the stomach, however much they may differ as to the nature of the pathological conditions giving rise to these very common painful states of the organ. We have hitherto been confined to two preparations, the trisnitrate and carbonate. Both these are insoluble powders, bulky and inconvenient, inasmuch as a single dose cannot be made into one or two pills.

The *Lancet* for September, 1863, states that Mr. Schacht, of Clifton, has succeeded in preparing a solution of bismuth, which is uniform in composition, stable, miscible with water or other fluids without precipitation, is efficient in small doses. This

solution is quite transparent, with a slight alkaline reaction; and although it contains only eight grains of oxide of bismuth in an ounce, a fluid drachm for a dose, is found to be equivalent to a full dose, fifteen or twenty grains, of the insoluble trisnitrate.

A very excellent chemist and pharmaceutist, Mr. Wayne, at the store of Suire, Eckstein & Co., in Cincinnati, has been for some time preparing the liquor bismuthi, and several physicians of that city have tested its efficacy and report very satisfactory results.

McMunn's Elixir of Opium.—For near a quarter of a century the secret nostrum known as McMunn's Elixir of Opium has been a favorite remedy with many physicians who have patronized it and praised it to the great delight of the proprietor, and the degredation of the profession.

The special excellence originally claimed for McMunn's Elixir was that the opium was *denarcotized*, but it has long since been very well established that *narcotine* possesses no narcotic principle, that it is at least harmless, if not a safe antiperiodic. Recent articles in the *Philadelphia Reporter* and the *New York Independent* give the entire *rationale* of the preparation, from which we learn, in brief, the following steps in the process.

1st. The opium is subjected to sulphuric ether, which is supposed to remove the narcotine, as also its peculiar noxious odor.

2d. A process of boiling follows, to remove the sulphuric ether.

3d. A watery solution is made and the opium is macerated for five or six days, after which

4th. Alcohol is added in certain proportions. After standing undisturbed a few weeks it is the *elixir* and is fit for use.

Reliable chemical analysis proves that the preparation thus made is for efficiency *only a solution of morphia*, that the process leaves the morphia, narcine and extractive matters only depriving the opium of its pseudo morphia, codeia, narcotina, thebaina, meconine, fatty matter, and resin. The narcine and extractive matters contained are so nearly inert that after the precipitation of the morphia, the liquid might be taken in doses of an ounce without injury. It seems then demonstrated that the so long vaunted Elixir of McMunn is nothing more than a solution of impure morphia.

The Calabar Bean.—No new remedy has perhaps attracted more interest of late than the calabar bean, especially among practitioners devoted largely or specially to eye surgery. We

are indebted to Dr. Christison for bringing the peculiar properties of this drug to notice. In his personal experiments he found that twelve grains of the powdered bean produced serious and dangerous symptoms of poisoning, accompanied with a remarkable contraction of the pupil. It is now found that a solution of the extract, or a tincture, if applied in small quantities to the eye, produce this contraction of the pupil in a singularly marked degree. In fact, in this respect its therapeutical action being exactly the reverse, or the antagonist, of the belladonna; and if atropine be applied to one eye a tincture of the calabar bean to the other, the two extremes of therapeutic effect are most remarkable. One of the most readily occurring uses of this remedy would suggest itself as counteracting the use of the atropine for its usual purposes in eye surgery; but undoubtedly its application in eye surgery alone will prove much more extended than this, even though its effects as a peculiar poison should not render it available for other purposes.

Permanganate of Potash.—Another new remedy, is attracting some attention, not particularly as a new salt, but from the fact that new properties and applications of it are proposed. Dr. Samuel Jackson, of Philadelphia, has contributed for the *American Journal of Medical Sciences* for January, an article on the Permanganate of Potash, as a rapid developer of ozone in the human system; and hence as likely to become an important remedy in the treatment of low forms of disease, especially those forms of disease dependent on a depraved condition of the blood, or a condition of blood faulty as to its oxygen; as for instance, erysipelas, hospital gangrene, typhus fever, and the like. As bearing somewhat on this remedy we quote a paragraph cut from one of the papers of the day:—

"Ozonized water is now used for drinking and the toilette. It is advertised in London in the following style: 'Its use is attended by a sensation which has been aptly described as the "perfume of purity." Being perfectly inoxious and tasteless, a few drops make a most refreshing and invigorating addition to the tumbler of plain drinking or soda water, from which they remove all trace of soluble organic matter—a fact of infinite importance to the voyager or the invalid. When employed for the toilet, bath, &c., it removes from the mouth all impure and foreign tastes and odors, whether arising from natural or artificial causes, such as the practice of smoking, and counteracts the irritation and morbid effect of carious teeth. It purifies and softens the skin, and tends to promote a healthy state of the whole body, by removing all secretion, and restoring a wholesome condition.' "

Now, Dr. Jackson states that this ozonized water of the English, is a solution of the permanganate of potash and water in the proportions of two parts to a thousand.

In dyspeptic conditions of the stomach he found this simple ozonized water had a decidedly tonic effect in doses of a teaspoonful three or four times a day. As a local application to ulcers it stimulated to a process of healthy action and cicitrization. In hospital gangrene it was given internally and applied locally; internally it was used after the following formula:—

℞. Permanganate of Potash, ---------- ℥j
Acid Sulph., ---------- xx gtt.
Aqua font.,---------- Oij.

Which is about two grains to the ounce; of this one teaspoonful was directed every three hours in a wine-glassful of water. Its good effects when applied locally were almost immediate.

Acting upon the hints in this paper of Dr. Jackson's, we learn that our fellow member, Dr. Dunlap, of Springfield, has experienced most gratifying effects from the use of the permanganate of potash in the treatment of "Spotted Fever," as it appeared recently in and about that city. He gave it in the form just noted, and in the more malignant cases increasing the dose from one-eighth to half a grain frequently repeated. His theory being that in epidemic spotted fever we have a depraved condition of the blood resembling that of malignant scarlatina or erysipelas.

Thus we might proceed, and still to considerable extent swell the matter of this report. We feel, however, that the patience of the Society has been sufficiently trespassed upon, and leave for future more careful gleaners to bring up the changing and improving progress which this department of medicine is making in its annual march.

LECTURE ON THE RESULTS OF THE SURGICAL TREATMENT OF CANCER.

By T. SPENCER WELLS, F.R.C.S., Surgeon in ordinary to Her Majesty's Household.

Gentlemen—Perhaps there is no question which more frequently arises in practice, or which is answered with so much doubt and hesitation, as the question, "Should a cancer be removed?" at one time, removal was the general rule of prac-

tice. Then the frequency of return after removal, and the revival of the humoral or chemical pathology, led to the rule only to operate in exceptional cases. It was asserted that by removal of a cancer in the early stage, we only removed one seat of deposit, left the blood unaltered, encouraged deposit in some other part, and so did more harm than good, often shortening life. Therefore it came to be a sort of rule of this school not to attempt to remove or destroy a cancerous tumor, unless it was either actually ulcerated, or growing so fast that the skin was about to give way, or the destruction of some vital part was threatened. It was urged that growths, having all the characters of cancer, occasionally disappeared, under the influence of hygienic or medical treatment—that other such growths have sometimes remained completely dormant for many years, without injuring the health, or shortening the life of the individual—and that it was absurd to say the disease was not cancerous in such cases because the patient recovered, or lived to old age, unaffected by the local disease. But the most determined leaders of this school admitted that in cases where an open cancer gives great pain, and is wearing away the patient by bleeding or profuse discharge, this cancer should be removed, in the hope, first, of relieving suffering, and, secondly, of prolonging, though not of saving life. In some other cases, where a cancer caused great mental anxiety to a patient, it was to be removed at her earnest entreaty, after fairly explaining the probability of a return of the disease. For many years these rules were followed in practice, and are so still by many excellent surgeons. But during the last four years a marked change has been taking place, and the professional mind is still in a a state of transition. The transudation hypothesis is falling before the cellular theory. The belief that cancer is always a disease of the blood, is severely shaken by the vigorous attacks of Virchow, and the positive and visible demonstration which he affords of the local origin of morbid growths, and the secondary contamination of neighboring parts, and of the blood, by extension and by absorption of the products of local disease. He has gone very far towards proving that the cells of the connective tissue (commonly known as cellular or areolar tissue) are the ovules of cancerous growths, as they are of all the new cellular productions. We are still ignorant of the nature of the peculiar change or irritation which, in the first instance, alters a connective tissue cell into a cancer cell; but when once this change has taken place, and the altered cells begin to grow and multiply by division, we have clearly a focus, both

of local and general contamination—local, by imbibition of the fluid formed by the diseased cells into the healthy cells of adjacent tissues; and general, by absorption or transudation of the morbid products through the lymphatics and veins. Thus, the harder the tumor, the less likely to spread; the softer, the more likely both to spread locally, and to contaminate the blood. The direct and necessary practical deduction for the surgeon, from these views, is, that all malignant growths should be removed in their earliest possible stage—as soon, in fact, as their nature is ascertained; and to this rule, surgeons seem to be partially, though perhaps unconsciously, returning.

It requires the observation, and careful observation, of many years, and of many independent observers, to settle such a point as this; but a great deal has been done to show, by comparing a large number of cases of cancer, where removal has been practiced, with others, where the patient has been left without operation, that the average duration of life in the patient operated on is decidedly lengthened. No trustworthy data exist for making such a comparison with cases in which the tumor was removed at a very early stage, but my own experience is leading me to adopt the rule deduced from the pathology of Virchow. I have had several cases since the publication of my pamphlet on "*Cancer Curers*," in which I have excised growths which microscopic examination has proved to be truly cancerous, and in which no return has yet been observed. The time is obviously too short to speak of them as permanent cures —indeed, it is almost certain that in nearly all there will, sooner or later, be a return; but the result has satisfied me that the rule of practice most commonly followed may be advantageously modified in cases where the disease is in a very early stage. The operation at that stage is a very trifling one, is perfectly painless under chloroform, and, so little necessity does there appear to be to keep patients to their rooms, that I have, both in private practice and among hospital out-patients, allowed them to come backwards and forwards from their homes. Supposing the general health to improve, and the cause which led to the first change in the connective tissue cells should not operate again, then *removal* really becomes *cure*.

If the teaching of Virchow, the greatest of living pathologists, be true—if the belief in the universal constitutional origin of cancerous tumors be unfounded—if the constitutional disease is, even in some few cases, secondary, the morbid condition of the blood originating in, and being kept up by a supply of hurtful ingredients from some diseased locality—how hopefully may

both surgeon and patient look upon the treatment of cancer in its early stages, before its germs have spread into neighboring tissues, before they or any irritating fluid have been conveyed to a distance, before the healthy cells of neighboring parts have imbibed by endosmosis the specific or parenchymatous fluid, or this fluid has been carried by lymphatics or veins to distant parts. And, on the other hand, how fearful is the responsibility of the cancer curer who tampers with the life of the poor sufferer who has confided in his knowledge and skill! If he attempt to procure absorption of the tumor and succeed, he may produce the general contamination of the blood of which the growth itself was erroneously regarded simply as an "outward and visible sign." If he fail, he still gives time for the growth of germs, and for extension, first, locally, and then by absorption. If he employ caustics, he may be adopting the very practice of all others most likely to lead to a rapid and general development of cancer throughout the body, by hastening softening of the growth, setting up irritation in neighboring parts, and assisting the transmigration of cancer cells through blood to distant parts of the body.

The fact that *removal* may really result in *cure*—that the disease may not return—should certainly encourage both patient and surgeon to think of removal in any case where the whole of the diseased part can be removed without unusual risk or difficulty; but it would be very wrong to conceal from any patient the fact that this happy result is extremely rare, and that, except under very unusual circumstances, no more can be expected from removal than prolongation of life, and diminution of suffering.

That *life is prolonged* by removal, is now satisfactorily established by statistics. The results of different statistical tables vary. But those most to be relied on tend to prove that the average duration of life in those operated on is certainly greater than in those in whom the disease is allowed to run its course without operation. In a valuable lecture published in the *Medical Times and Gazette*, in 1862, Mr. Paget says—"In a recent tabulation of hospital and private cases, 85 cases operated on lived an average of 55.6 months, and 62 cases not operated on lived an average of 43 months. And some such proportion as this will probably always be found."

Not only is life prolonged, but *suffering is lessened.* The amount of suffering, mental and bodily, of a patient during the ordinary course of cancer is very great, "Consider," says Mr. Paget, "the pain and anxiety—the pain likely to increase daily

—the misery of waking every day to the consciousness of an incurable disease; the sometimes loathsomeness; the restlessness for cure—cure, such as there are *never wanting dishonest men to promise.*" By an operation, painless under chloroform, and not followed by painful dressings, this constant, daily, weary pain is relieved for a time, and the patient is also restored to a state of mental comfort, which is as great a gain as the relief from pain. In some cases, where there is no hope of prolonging life, the pain and suffering from an open cancer are so great that it is right to operate simply to obtain for the patient a comparatively painless death.

If, then, the oft-repeated objection to operation—that life is not lengthened, but shortened—is satisfactorily answered; if we also dismiss, as unproved, and certainly erroneous, the suggestion that when the disease returns it will be in a more aggravated form than if the disease had run its own course, the question arises, "Why not operate in every case?" And the answer is ready, "Because the operation is one attended with risk to life." In some cases this risk is very great, in others very small; but taking the average of some hundreds of cases, Mr. Paget estimates that "a patient runs a risk of 1 in 10 of dying" from the operation. Others estimate the risk as low as 5 per cent, or 1 in 20.

In a consultation, however, upon any individual case, neither patient nor surgeon will be content with a mere statement of averages. It is seen at once, as from 1 in 20 to 1 in 10 die of the immediate effects of the operation, and the average life of those operated on is over 55 months, that some patients must live many years. And the questions which are asked are not: What are the *general* results of operation? How long do people *in general* live after it? How soon does the disease *generally* return after operation? But the individual case is pressed home: What risk would there be to *my* life? How long should *I* be likely to live? How soon might *I* expect a return of the disease?

It is said, and said truly, that general conclusions can only be drawn from general averages. Mr. Paget says:—"To deal with single cases is a sort of surgical gambling." The gamblers, however, are they who operate in nearly every case which comes before them, and they who operate in none, both classes satisfying themselves by statistical tables and general averages, rather than by forming a careful estimate of the probable results of treatment in each case. Each case must be considered by the light of general experience, but it is no less in

itself a subject for separate calculation. And in every case which comes before us we must be guided by certain general rules, the most important of which may be shortly summed up as follows:—

Risk of Removal.—The average mortality being from 5 to 10 per cent, in what cases is the risk above, and in what below the average? Supposing the patient to be placed under the most favorable circumstances possible to prevent the occurrence of erysipelas, pyæmia, any form of septicæmia, or secondary hemorrhage (the chief causes of death *soon* after operation), the probable liability of any patient to these dangers may be estimated by observing certain general and local conditions. The *general* conditions favorable to operation, or those which may fairly justify the hope that a patient will not die from its effects, are, that she is not more than 60 years of age, not emaciated, is well-nourished, clear-complexioned, temperate, courageous and even-minded, and free from other organic disease. The reverse conditions are seen in patients over 60 years of age—in over or under-fed people—the emaciated, or the fat and plethoric—those of cachectic, leukæmic or chloro-anæmic aspect—the dejected or hysterical—and they who, in addition to the cancer, have some organic disease of heart, lungs, liver, or spleen. The favorable *local* conditions are that the skin over and near the tumor is soft and healthy, free from œdema, freely movable, and free from scattered nodules of cancer—that there are no diseased cervical glands—none, or few, diseased axillary glands—that the breast is small—that only one breast is diseased—and, if only part of one be affected, that this is the lower part. The unfavorable local conditions are, the skin is brawny, the hair-follicles large and open, the skin over the tumor adherent, that there are scattered cancerous tubercles in the skin, that the supra-clavicular glands are swollen, that there are many diseased axillary glands, that the breasts are large, that both are diseased, or, if only part of one, that it is the upper part.

By bearing these things in mind, it is not difficult so to select cases as to reduce the risk of removal to a very low average, and there can be no difficulty in deciding in any case whether the risk is greater or less than the average.

When part of one breast only is affected, the rule generally followed is to remove the whole breast; and this rule is a good one if the breast is small. But when only a small portion of a large breast is affected, it is much less dangerous, and equally effectual, to remove the diseased part and some of the surround-

ing healthy tissue, than to remove the whole breast. There is good reason to believe that the disease is as long in returning when only the diseased part has been removed, as when the whole breast is removed.

When it has been decided to remove cancer, the question will arise, "Should it be removed by the knife, or by caustic?" And the answer must be framed again upon full consideration of all the circumstances of each case, but guided by the following general rules:—

1. There is no proof, whatever, that the return of cancer after removal by caustic, is less rapid than after removal by the knife. On the contrary, it is probable that the return will be more rapid, (*a*) from the greater probability that some portion of the cancer will escape the action of the caustic than the dissection of a careful surgeon; (*b*) from the inflammation set up in the surrounding tissues and the irritation of neighboring glands.

2. Admitting that the immediate risk to life from the removal by caustics may be less than after removal by the knife—in other words, that pyæmia and hemorrhage are less likely to occur—we have abundant proof that the risk is very considerable, and that the intense and long-continued suffering does in itself lead to exhaustion and death.

3. It is possible that the attempt to remove a cancer by caustics may fail altogether, that the irritation set up in the diseased growth and in the parts surrounding it, or the extension of the sloughing to vital parts in the neighborhood, may destroy the patient before the cancer is destroyed.

These objections will generally lead the surgeon to advise the patient rather to submit to excision than to caustics. But in some cases, where the situation of the growth is such that the knife cannot be used safely, caustics are decidedly preferable, as they are also in cases where the growth is small, or of moderate size, and slow in its progress, while the unhealthy general condition of the patient would render the knife more than usually hazardous; for, as Mr. Paget has said, "the constitutional maladies that greatly increase the risk of cutting, do not, except very rarely, increase the risk of caustics." There are also some cases of open cancer in a very late stage of the disease, so adherent that the knife could not be safely used, where the diseased part may be completely destroyed by caustic, and a sound cicatrix may result. Sometimes it may be well to leave the choice to a patient, after representing to her fairly the advantages of the two methods. Some may be guided by the

dread of the knife, others more by the dread of pain, and it is right to allow these fears their full weight.

The cases decidedly unfit for caustics are those of acute or rapidly growing cancer, or those of large size, and those where there is an œdematous, brawny, or tuberculated or ulcerated condition of the surrounding skin, and those where the supra-clavicular or axillary glands are enlarged and indurated. And most of the conditions which, on general grounds, forbid the use of the knife, also forbid the use of caustic.

Supposing it to be decided to destroy a cancerous tumor by caustic, all the evidence before us goes to prove the chloride of zinc to be the most effectual and safest yet employed; that it is a matter of great indifference whether it is employed as a paste or in solution; but that its action is considerably hastened by scoring through the slough, as Justamond did, down to the living tissues beneath, so that they are not protected by the slough from the action of the caustic. This scoring is not so necessary when the chloride is used in solution as when it is used as paste, after destroying the skin by nitric acid; and it is not at all necessary if one or more pairs of galvanic plates are used as the caustic. If a piece of zinc be placed on any raw surface, and a piece of silver near it, a silver wire connecting the two, the part covered by the zinc is destroyed very rapidly, and the slough formed is a very soft one, which is easily sponged away. I saw a lady in 1854, with Dr. Lawrence, of Connaught-square, suffering from cancer of the breast, and we decided, on consultation, to adopt this method, which Dr. Lawrence carried out most effectually. I should not be at all surprised to hear that the next great empiric who appears in London, will profess to cure cancer by galvanism.

Occasionally it is advisable to apply the actual cautery, instead of using caustic, and I have recently found the use of a small jet of lighted gas, by means of the instrument made by Mathieu, for M. Nélaton, very efficacious. It is much more easily arranged than the galvanic cautery, is equally manageable, and has the great advantage of destroying parts without touching them; so that there is no fear of the eschar adhering to the metal, being removed as the metal is withdrawn, and bleeding thus being set up. In cancer of the upper jaw, or base of the skull, which project into the mouth, very great temporary relief is gained, even if only a partial destruction of the growth can be effected.

When removal cannot be recommended either by the knife or by caustics, it must be remembered that we can do a great deal

more towards arresting, even curing cancer, than is generally believed—that our art is not nearly so powerless as charlatans assert. Growths with all the characters of cancer have occasionally, although very rarely, disappeared under the influence of remedies. Other such growths have remained completely dormant for many years, without affecting the health or shortening the life of the individual; and it is absurd to say that the disease was not cancerous in such cases, because the patient recovered, or lived to old age, unaffected by the local condition. —*Med. Times and Gaz.*, Feb. 11, 1865.—*Med. News.*

THE EPIDEMICS IN RUSSIA AND NORTH GERMANY. Report of the Medical Officer of the British Privy Council.

[In the preceding number of the Examiner, we suggested that the epidemic in Russia was only a form of typhus. The following is from high authority:—Ed.]

Mr. Simon, the medical officer of the privy council of the Queen of England, has reported to Lord Granville the result of the official inquiries which have been made, respecting the epidemic in Russia, and the disease which prevails in North Germany. With respect to the former, he says:---

"As regards St. Petersburg, the epidemic which is prevailing in that city consists of two forms of fever, which are known in this country as relapsing fever and typhus. Of relapsing fever (which, also, from the circumstances under which it prevails, is familiarly known by the name of famine fever), we have had no large experience in this country since the years 1846–48, when, in consequence of the Irish distress, the disease first became epidemic in Ireland, and next raged in Liverpool and many other of our chief towns, to which its contagion was brought by Irish immigrants. Typhus, on the other hand, is probably never absent from among us.

"During the last two or three years, there has been an almost unprecedented amount of it in London, and, as your lordship is aware, inquiries relating to very large epidemics of it in Liverpool, Greenock, and Bristol, have, during the last few months, been required of the medical department of the council office. In times when relapsing fever prevails—and always they are times of national scarcity—typhus always, or nearly always coëxists with it. It was so in Liverpool in 1847, it is so at St. Petersburg at present. The mixed epidemic,

wherever it occurs, testifies to the miserable state of a starving and overcrowded proletariat; and there seems reason to believe that, if the St. Petersburg epidemic is of more than common severity, this is only in result of extremely aggravated conditions of privation, overcrowding, filth, and district unwholesomeness, operating on large masses of the lowest population.

"It is probable that the relapsing fever has caused particular alarm in St. Petersburg, from the fact that the disease had never before prevailed there, nor, indeed, been much known anywhere in Russia. But it is a disease greatly less dangerous than typhus. To persons whom they respectively have attacked in this country, typhus has been seven or eight times as fatal as relapsing fever. Both typhus and relapsing fever are communicable from person to person, by means of the general exhalations of the sick; and the danger of such contagion acquires its utmost development when masses of ill-fed population are crowded together in places which are insusceptible of ventilation. It seems probable that the fevers now prevailing at St. Petersburg are not only extensively diffused, but in their respective kinds are of fully average severity.

"The relapsing fever is causing more than its usual proportion of deaths, and is notably attended with those inflammatory swellings which are known by the name of buboes. Although the reports which are before me do not state the relative frequency with which the latter symptom is observed, yet from the fact of being mentioned in a very general report on the epidemic, I infer that it has been more than commonly frequent, and doubtless it was from this circumstance that there arose the rumors of plague. It is therefore requisite to mention that buboes are by no means exclusively characteristic of the plague, that severe typhus in this country is not unfrequently attended by them, and that also in our other forms of fever, they are sometimes, though far less frequently, observed.

"The great importance, however, of the question which is involved in that symptom of buboes was a main reason for your lordship's thinking it desirable to have an English physician's report in all the elements of the St. Petersburg epidemic; and it was therefore that, under your lordship's orders, I instructed Dr. Whitley to proceed to St. Petersburg, for the purpose of making personal examinations in the matter. He arrived at St. Petersburg on Saturday night last; and his telegram, which I received on Tuesday, informs me in positive terms that 'nothing resembling plague has been observed.'

"The disease in North Germany he describes as having no dependence on the Russian fever.

"That disease (the North German) is one of which, hitherto, England has had no general experience. Even in foreign medical literature, mention of it is but comparatively recent, and the knowledge which relates to it is incomplete. It is a febrile nervous affection, of a very painful and very dangerous kind. By us, for practical purposes, it may be regarded as a new disease; but, in truth it has for the last 28 years been prevailing very extensively in successive small epidemics, both in Europe and America, throughout the entire breadth of the north temperate zone."

Dr. Sanderson was instructed to visit those places about the Lower Vistula, where the singular disorder prevails, and he has reported that he finds "no reason for regarding the disease as pesronally communicable;" that he has "met no single instance in which more than one member of the same family has been attacked; nor has there been any diffusion of the disease in any of the hospitals." Mr. Simons sums up his report as follows:—

"From the foregoing statement, your lordship will have gathered that, neither as regards the fevers which are present in St. Petersburg, nor as regards the nervous disease which is occurring in North Germany, are the circumstances such as have, on former occasions, led to the adoption of quarantine by this country; that, as regards the importability of the nervous disease, our danger in communicating with the Baltic ports—unless there were movement of masses of infected population—is apparently nothing, or next to nothing, and that, as regards the Russian epidemic, our danger in communicating with St. Petersburg is only the same sort of danger as the several parts of the United Kingdom have often occasioned to one another, and are even at the present time, as regards the worst known forms of fever, daily and abundantly occasioning.

"As, however, it is possible, and even probable that, with the reopening of the Baltic navigation, ships which come to our port from Russian territory may occasionally have fever cases on board, it is essential that, in places which this danger may affect, the local sanitary authorities should exercise peculiar vigilance against all those unwholesome conditions which favor the propagation of such disease."

Small-Pox is ravaging Lahore, 7000 out of a population of 50,000 of the native inhabitants having fallen victims to it within two months. We are not informed what is the state of vaccination in this district.

SLITTING THE CERVIX IN DYSMENORRHŒA.

CINCINNATI, April 19th, 1865.

E. B. STEVENS, M.D., *Editor Lancet and Observer:*—In a letter received by me a few days since, from Dr. George K. Kidd, Editor of the *Dublin Quarterly*, and one of the physicians to the Coombe Lying-In Hospital, the following passage occurs:—

"You speak of Churchill being opposed to slitting the cervix in cases of dysmenorrhœa. I think I have converted him from this by curing a lady that he had been treating for months, without effect and relief, with sea-tangle. I have no doubt slitting is the only effectual cure in many cases: dilating with tents is utterly useless, as the os closes again in a very few days."

Dr. Kidd's character and position entitle his asertions to be received with great respect. The statement to which Dr. Kidd alludes, was made in one of my letters to the *Lancet & Observer* from Dublin. Immediately after my visit to that city, I spent some little time in Edinburgh, and there had a more favorable opportunity of studying the value of the operation referred to. Professor Simpson, a man not less remarkable for genius than for industry, probably, and justly, the highest living authority in diseases of women, who was the first to perform the operation—now more than twenty years ago—still adheres to it. In what he terms "obstructive" dysmenorrhœa—most authors, however, use "mechanical"—the consequence of narrowing some portion of the cervical canal, generally at the *os externum*, and where, as one of the consequences, there has been sterility, the results of incision have been quite satisfactory. The operation is easily and quickly done with his *hysterotome;* the hemorrhage is but little, unless the incision is very free in the superior portion of the neck, and, even when likely to be severe, can be readily controlled with per-chloride of iron, and, if necessary, the tampon. In one of the cases I saw operated on —the operator was Professor Simpson's nephew, and assistant, Dr. Alexander Simpson—the lady not only walked to the Home, but also walked away, the discomfort and hemorrhage were so slight.

The readers of the *London Lancet* will observe that our own countryman, Dr. Marion Sims, in one of the chapters of his forthcoming book, now in publication in that journal, speaks very positively in favor of the operation.

The treatment of this condition of the cervix by bougies—the

advantages gained by sponge-tents or sea-tangle are, as Dr. Kidd so justly observes, but temporary—like most of my professional brethren, I have found very tedious and unsatisfactory. Nor is it, as so well pointed out by Dr. Sims, devoid of danger. It occurred to me, last winter, to see in consultation, a lady with very serious *pelvic cellulitis*, suppuration ensuing, and the pus discharging through the rectum, the disease following the continuous use for several weeks, of bougies, to relieve a contracted cervix. And yet I cannot doubt but in this instance the utmost caution and skill were used with these instruments, for she had been under the care of a leading practitioner in such diseases, in one of our Eastern cities.

In a word, to conclude this note, which was suggested by Dr. Kidd's letter, I am satisfied that the perils of incision are much less than those of dilatation, while the results are far more satisfactory. T. P.

—*Lancet and Observer.*

ENTOZOA IN VEAL AND BEEF.

To the Editor of The Lancet.---*Sir:*---At the risk of riding the "hobby-horse" a little to fast, I would call the attention of your readers to an interesting entozoological fact.

Professor Simonds and myself have just succeeded in rearing the larvæ of *tænia mediocanellata* in a calf, but at present the cysticerci are not perfectly developed. We know, however, that the larvæ are there, not only by the symptoms produced, but also from ocular demonstration; for having removed a very small portion of the right sterno-cleido-mastoid muscle (weighing 22 grains), three minute cysticercus-vesicles were discovered in the portion detached. Even if the other muscles (to say nothing of the heart, lungs, and liver) are affected to the same extent only, we shall eventually find not less than 30,000 larval entozoa in this one animal---enough to give 30,000 persons the *tænia mediocanellata*, should they be severally disposed to swallow a cysticercus.

By a *post hoc propter hoc* kind of reasoning, we might say that the little operation has done good, for the calf in certainly much better since the removal of three of its "guests." Each larva is about the size of a pin's head.

Now that I am on the subject of entozoa, perhaps you will allow me to correct an erroneous and widely-spread impression which seems to have taken firm hold on the public mind. It is

supposed that I am averse to "sewage-distribution" on entozoological grounds. This is an error. The object of my "pamphlet" is to show that, *without due precautions* (based upon an intelligent appreciation of the facts which recent helmintholgical discoveries have unfolded), very serious evils may result.

The majority close their senses against all evidence, and vote science a nuisance, whilst the more enlightened minority demand proof from the past, and point to Edinburgh experiences. To the latter class I would say that the case of the Craigentinny-meadows affords negative evidence, simply because the cows fed upon their grass-produce are employed to give milk, and are not commonly eaten as food. There are other reasons, upon which I cannot now enlarge; and as to the *Bilharzia*, that must also, for the present, stand apart.

I am not aware that I have advanced any statements that are inconsistent either with truth or honesty of purpose, and it has yet to be shown that the conclusions which I have drawn are at variance with the principles of sound deductive reasoning. It may serve an agriculturist's turn to characterize my views as those of an "alarmist," but after the able article which has appeared in your pages, I can well afford to "rest and be thankful." I am Sir, your obedient servant,

T. SPENCER COBBOLD, M.D., F.R.S.

Middlesex Hospital, Feb. 14th, 1865.

Book Notices.

HAND-BOOK OF SKIN DISEASES, FOR STUDENTS AND PRACTITIONERS. By THOMAS HILLIER, M.D., London, Member of the Royal College of Physicians; Physician to the Skin Department of University College Hospital; Physician to the Hospital for Sick Children. With Illustrations. Philadelphia: BLANCHARD & LEA. 1865.

This is a moderate sized octavo volume, of 353 pages; neatly printed, and bound in cloth. It is a concise, plain, practical treatise on the various diseases of the skin; just such a work, indeed, as was much needed, both by medical students and practitioners. After the introductory chapter, the author briefly reviews the classifications of Galen, Mercurialis, Frak, Wilson, Hebra, and others, gives a chapter to the anatomy and

physiology of the skin; another to the definition of terms; and one each to etiology and diagnosis. He then treats the various diseases in detail, under the following heads:---Exanthemata; papular diseases; squamous diseases; vesicular diseases; pustular diseases; hemorrhagic diseases; maculæ and pigmentary diseases; diseases due to changes in the sebaceous follicles; hypertrophies and degenerations; gangrenous inflammations of the skin; parasitic diseases; diseases of the nails and hairs; acute eruptive diseases; syphilides, and appendix.

For sale by W. B. KEEN & Co., 148 Lake St., Chicago.

A VEST-POCKET MEDICAL LEXICON: Being a Dictionary of the Words, Terms, and Symbols of Medical Science. Collated from the best Authorities, with the addition of New Words, not before introduced into a Lexicon. With an Appendix. By D. B. ST. JOHN ROSA, M.D., Aural Surgeon to the New York Eye and Ear Infirmary. New York: WM. WOOD & Co., 61 Walker Street. 1865.

This is truly a pocket lexicon, being only about two inches square and three-quarters of an inch thick, embracing 363 pages. It is just what its title indicates; and will be found exceedingly convenient, especially by students of medicine.

For sale by W. B. KEEN & Co., Lake St., Chicago.

TWENTY-SECOND ANNUAL REPORT OF THE MANAGERS OF THE NEW YORK STATE LUNATIC ASYLUM, for the year 1864.

This is a pamphlet of 32 pages, embracing the usual statements of facts in relation to finances, number of admissions, discharges, cures, deaths, &c., from one of the oldest and largest Lunatic Asylums in our country.

A RADICAL OPERATION FOR PROCIDENTIA, read before the New York Obstetrical Society, Dec. 20th, 1864. By THOS. ADDIS EMMET, M.D., Surgeon to the State Woman's Hospital, New York.

This is a neatly printed pamphlet of 17 pages, illustrated by two well-executed cuts. No abstract can be given which would convey an adequate idea of the operation proposed and practiced by Dr. Emmet. We would republish the whole pamphlet in our columns, if the cuts could go with it. But without them it would be so incomplete that we must refer our readers to the pamphlet itself.

London Lancet.---The April number of this old representative of English periodical medical literature, is promptly on our table, and filled with the usual variety of interesting and important articles.

Editorial.

Illinois State Medical Society.---The full record of proceedings of the recent meeting of our State Medical Society will be found in this number of the Examiner. The meeting was well attended. Though the standing committees all failed to report, yet the reports of special committees and volunteer papers were sufficient to occupy, pleasantly and profitably, all the time at the command of the meeting. The discussions were more than usually free, cordial, and interesting. The Committee of Arrangements discharged their duties with fidelity and good judgment. The visit to the State Normal University was very gratifying in every respect. The reception, on the part of the Principal and Faculty, was cordial and elegant; the institution, in all its departments, apparently under excellent management; and the location beautiful. We were glad to greet again among the members several who had been absent for the last three or four years, discharging the arduous and responsible duties of medical officers in the army. We hope our country may never *need* their services in the same capacity again.

Annual Meeting of the American Medical Association. —In the April number of the Examiner, we stated that whatever differences of opinion had existed in the minds of the profession in Boston, in relation to the approaching meeting of the Association, had been reconciled; and that the members would be as cordially received in Boston, on the 6th of June, as they had been in any other city in our country. As confirmatory of what we then said, we copy the following editorial from the *Boston Medical Surgical Journal*, of May 11th, 1865. We fully

endorse the liberal sentiments it expresses, and hope they will be responded to by full delegations from every part of our great country:—

The American Medical Association.—The sixth of June, the day appointed for the meeting of the National Association, in Boston, is fast approaching, and all things now seem to combine to make the occasion one of unusual interest and complete success. The doubts which partly occupied the minds of some of us, as to the practicability of holding the meeting this year, while the storm of war still hung over the country, are dissipated in this new sunshine of peace, and our thoughts, no longer distracted by anxiety, can after four long years be again, and for the first time, wholly given to a consideration of our professional interests. Those who have so nobly represented us in the field, and who have not failed to sustain equally with our brave and victorious soldiers our national glory, are now returning, prepared to lay before us, at that time, the fresh results of their long labors, and it would be a lasting reproach to us did not the profession throughout the country make this the occasion of publicly expressing our appreciation of their services, and of giving them such a welcome back to our ranks as we know awaits the reception of the rest of our gallant army to its homes. To those, also, who were once so gladly met in these meetings, and who have as devotedly sacrificed themselves in the cause for which their people have so vainly fought, we extend, in the name of our national association, and our common interests in science, a cordial invitation.

The committees, to which have been entrusted the preparations for the reception and entertainment of our guests, have nearly matured their plans, and have met with the most ready coöperation from State and city authorities, and from all parties with whom they have communicated. The members of our profession will, without doubt, show the same willing spirit to assist the finance committee in its work when called upon, as we learn they will be during the coming week. From the entire unanimity in the profession, and the reputation which Boston possesses, as a centre of scientific and educational interests, there can be no doubt as to the nature of the reception or the attractive character of the entertainment which the city will give the Association. There is, indeed, but a single suggestion which we can offer to the committee, and this has, perhaps, been already anticipated; it is that invitations should be sent to the whole medical staff of the army, through the proper

channels, to be present. It remains now for the various societies and institutions of the country, through their delegates, and for the chairmen of the scientific committees, to give to the coming meeting its true character, and we trust that all, far and near, will do their utmost to make it, as it promises to be, the most important one in the history of the Association.

Assassination of President Lincoln.---Of all the bloody and cruel tragedies of the last four years, none have startled the whole civilized world, and sent such a thrill of horror through every virtuous mind, as the deliberate murder of the late President of the United States. Surely the climax of wickedness has been reached. Let us hope the full cup of national affliction has been taken to its last drop. From this to the first day of June, the day set apart for national fasting and prayer, let every Christian in the land endeavor, by thorough self-examination to be prepared to make that day, not only one of fasting and prayer, but also the dawn of a full reunion of all Christian hearts, as well as of all the States of our great and, hitherto, highly favored country. As a matter of interest to all medical men, we append the following detailed account of the President's death and autopsy:—

The *Philadelphia Medical and Surgical Reporter*, of the 22d of April, contains a paper on the last hours of Abraham Lincoln, by C. S. Taft, Assistant-Surgeon, United States Army, which, as he says, "will doubtless prove of much interest to the profession, and may be relied on as correct in all particulars, the notes from which it was written having been submitted to comparison with others taken, and corrected, by the highest authority." Surgeon Taft was in the theatre when the President was shot; heard the pistol; "saw a wild-looking man jump from the box to the stage," and responded to the call for a surgeon. When he entered the box, the President was lying upon the floor, and "the respiration was inaudible and scarcely perceptible, and he was totally insensible." His "coat and vest had already been cut off, searching for the wound. The wound in the head was soon found, but, at that time, there was no oozing from it." When the President was removed to the house opposite, the wound was examined, "the finger being used as a probe, and the ball found to have passed beyond the reach of the finger, into the brain." The surgeon says:—

"I put a teaspoonful of diluted brandy between the lips, which was swallowed with much difficulty; a half teaspoonful administered ten minutes afterwards was retained in the throat, without any effort being made to swallow it. The respiration now became labored; pulse 44, feeble; eyes entirely closed, and left pupil much contracted, the right widely dilated; total insensibility to light in both."

The surgeon continues his report:—

"About 11:30 P.M., twitching of the facial muscles of the left side set in, and continued some fifteen or twenty minutes, and the mouth was drawn slightly to the same side. Sinapisms over the entire anterior surface of the body were ordered, together with artificial heat to the extremities.

"The wound began to ooze very soon after the patient was placed upon the bed, and continued to discharge blood and brain-tissue until 5:30 A.M., when it ceased entirely; the head, in the meantime, being supported in such a position as to facilitate the discharge. The only surgical aid that could be rendered, consisted in maintaining the head in such a position as to facilitate the discharge of the wound, and in keeping the orifice free from coagulum.

"Col. Crane, Surgeon, U.S.A., had charge of the head during a great part of the time, being relieved at intervals in this duty by myself. While the wound was discharging freely, the respiration was easy; but the moment the discharge was arrested from any cause, it became at once labored.

"It was also remarkable to observe the great difference in the character of the pulse, whenever the orifice of the wound was freed from coagulum, and discharged freely; thus relieving, in a measure, the compression. This fact will account for the fluctuations in the pulse, as given in the subjoined notes.

"At 2 A.M., an ordinary silver probe was introduced into the wound by the surgeon-general. It met an obstruction about three inches from the external orifice, which was decided to be the plug of bone driven in from the skull, and lodged in the track of the ball. The probe passed by this obstruction, but was too short to follow the track the whole length. A long Nélaton probe was then produced, and passed into the track of the wound for a distance of two inches beyond the plug of bone, when the ball was distinctly felt; passing beyond this, the fragments of the orbital plate of the left orbit were felt. The ball made no mark upon the porcelain tip, and was afterward found to be of exceedingly hard lead.

"Some difference of opinion existed as to the exact position

of the ball, but the autopsy confirmed the correctness of the diagnosis upon first exploration. No further attempt was made to explore the wound.

"After the cessation of the bleeding from the wound, the respiration was stertorous up to the last breath, which was drawn at twenty-one minutes and fifty-five seconds past 7; the heart did not cease to beat until twenty-two minutes and ten seconds past 7. My hand was upon the heart, and my eye upon the watch of the surgeon-general, who was standing by my side, with his finger on the carotid.

"The decubitus during the whole time was dorsal, and the position on the bed diagonal; the length of the bedstead not admitting of any other position.

"The respiration during the last thirty minutes was characterized by occasional intermissions, no respiration being made for nearly a minute; but, by a convulsive effort, air would gain admission to the lungs, when regular, though stertorous, respiration would go on for some seconds, to be followed by another period of perfect repose.

"At these times, the death-like stillness and suspense were thrilling. The cabinet ministers and others surrounding the death-bed, watching, with suspended breath, the last feeble inspiration, and, as the unbroken quiet would seem to prove that life had fled, turn their eyes to their watches; then, as the struggling life within would force another fluttering respiration, heave deep sighs of relief, and fix their eyes once more upon the face of their dying chief.

"The wonderful vitality exhibited by the late President, was one of the most interesting and remarkable circumstances connected with the case. It was the opinion of the surgeons in charge that most patients would have died in two hours from the reception of such an injury, yet Mr. Lincoln lived from 10:30 P.M. until 7:22 A.M.

"The following observations of the pulse and respiration were noted down by Dr. A. F. A. King, at the bedside, and are correct. The pulse was counted by Acting-Assistant-Surgeon Ford:—

10:55—48.
11:06—45.
11:18—42, and weaker.
11:24—42, respirations 27 per minute, breathing quiet.
11:26— irregular, intermits occasionally.
11:30—45, respiration more frequently and vigorous.
11:32—45, stronger, respiration much more strong and stertorous.

11:37—48, respiration again silent and more feeble.
11:40—45.
11:43—45, respiration stertorous.
11:47—45, respiration 24, stertorous.
11:56—48, weaker.
12:10—48, irregularly intermittent.
12:18—48, same character.
12:27—54.
12:28—60.
12:29—66, intermittent.
12:38—66.
12:45—69, intermittent.
12:49—84, respiration 28.
12:56—66.
1:00—100.
1:15—92.
1:30—95.
2:10—60, respiration 34.
2:19—58.
2:32—54.
2:37—48.
2:54—48, much weaker, more thready; respiration feeble.
4:18—60, respiration 27, strong and stertorous.
5:40—64, thready, respiration 27.
6:10—60, hardly perceptible (Barnes), respiration 26, stertorous.
6:25—thready, not counted; respiration 22; inspirations jerking.
6:40—inspirations short and feeble; expirations prolonged and groaning; a deep, softly, sonorous, cooing sound at the end of each expiration, audible to bystanders.
6:45—respiration uneasy, choking and grunting; lower jaw relaxed; mouth open; a minute without a breath; face getting dark.
6:50—breathes again a little more at intervals; another long pause.
7:00—still breathing at long pauses.
7:20—died.

"About 1 P.M., spasmodic contractions of the muscles came on, causing proation of the fore-arms, the pectoral muscles seemed to be fixed, the breath was held during the spasm, and a sudden and forcible expiration immediately succeeded it.

"About the same time both pupils became widely dilated, and remained so until death.

"During the night, Drs. Hall, May, Liebermann, and nearly all the leading men of the profession in the city, tendered their services.

"AUTOPSY, FIVE HOURS AFTER DEATH.

"Present---Surgeon-General Barnes, Col. Crane, Dr. Stone, Assistant-Surgeon Woodward, U.S.A., Assistant-Surgeon Curtis, U.S.A., Assistant-Surgeon Notson, U.S.A., and Acting-Assistant-Surgeon Taft, U.S.A.

"The calvaria was removed, the brain exposed, and sliced down to the track of the ball, which was plainly indicated by a line of coagulated blood, extending from the external wound in the occipital bone, obliquely across from the left to the right through the brain to the anterior lobe of the cerebrum, immediately behind the right orbit. The surface of the right hemisphere was covered with coagulated blood. After removing the brain from the cranium, the ball dropped from its lodgment in the anterior lobe. A small piece of the ball, evidently cut off in its passage through the occipital bone, was previously taken out of the track of the ball, about four inches from the external wound. The hole made through the occipital bone was as cleanly cut as if done with a punch.

"The point of entrance was one inch to the left of the longitudinal sinus, and opening into the lateral sinus. The ball was flattened convex on both sides, and evidently molded by hand, in a Derringer pistol mold, as indicated by the rigid surface left by the nippers in clipping off the neck.

"The orbital plates of *both* orbits were the seats of comminuted fracture, the fragments being forced inward and the duramater covering them remaining uninjured. The double fracture was decided to have been caused by *contre coup*. The plug of bone driven in from the occipital bone was found in the track of the ball, about three inches from the external wound, proving the correctness of the opinion advanced by the surgeon-general and Dr. Stone, as to its nature, at the exploration of the wound before death.

"The ball and fragments, together with the fragments of the orbital plates, and plug from the occipital bone, were placed in the possession of Dr. Stone, the family physician, who marked and delivered them, pursuant to instructions, to the Secretary of State, who sealed them up with his private seal. The Nélaton probe used was also marked by me, and sealed up in like manner."

American Medical Association.—The American Medical Association will hold its Sixteenth Annual Meeting in the City of Boston, on Tuesday, June 6th, 1865.

The following Committees are expected to report:—

On Insanity—Dr. H. R. Storer, Mass., Chairman.

On Exsection and its connection with Conservative Surgery —Dr. Lewis A. Sayres, N. Y., Chairman.

On Drainage and Sewerage of Large Cities, and their Influence on Public Health—Dr. W. J. C. Duhamel, D. C., Chairman.

On Alcohol and its Relations to Man—Dr. G. E. Morgan, Maryland, Chairman.

On Quarantine—Dr. Wilson Jewell, Penn., Chairman.

On Medical Ethics—Dr. John A. Murphy, Ohio, Chairman.

On the Microscope—Dr. James M. Corse, Penn., Chairman.

On the Relations which Electricity sustains to the Causes of Disease—Dr. Squire Littell, Penn., Chairman.

On the Morbid and Therapeutic Effects of Mental and Moral Influences—Dr. A. B. Palmer, Mich., Chairman.

On the Causes of the Extinction of the Aboriginal Races of America—Dr. Geo. V. Suckley, Md., Chairman.

On the Causes and Treatment of Ununited Fractures—Dr. Frank H. Hamilton, N. Y., Chairman.

On Diphtheria—Dr. Lucius Clark, Ill., Chairman.

On the Uses and Abuses of Pessaries—Dr. James P. White, N. Y., Chairman.

On International Medical Ethics—Dr. J. Baxter Upham, Mass., Chairman.

On Climatology and Epidemic Diseases—Dr. C. W. Parsons, R. I., Chairman.

On Autopsies in Relation to Medical Jurisprudence—Dr. T. C. Finnell, N. Y., Chairman.

On so-called Spotted Fever—Dr. James J. Levick, Penn., Chairman.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Dr. A. Nelson Bell, N. Y., Chairman.

On Patent Rights and Medical Men—Dr. David Prince, Ill., Chairman.

On Revision of Plan of Organization—Dr. N. S. Davis, Ill., Chairman.

On Specialists—Dr. J. Homberger, N. Y., Chairman.

On Compulsory Vaccination—Dr. A. N. Bell, N. Y., Chairman.

On Rank of Medical Corps in the Army—Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy—Dr. T. L. Smith, N. Y., Chairman.

WM. B. ATKINSON, *Permanent Secretary.*

CITY MORTALITY.----STATISTICS FOR APRIL.

The mortality report for the month of April, has been prepared by Mr. M. P. Riordan, Assistant-Health-Officer, and will be found below. Notwithstanding the great influx of strangers into the city at this season of the year, the decrease in the number of deaths, when the past month is compared with the same month last year, is 48. The total number of deaths in April, 1864, was 298; while in April, 1865, it was only 250. Small-pox seems, also, to be on the decrease in the city. The number of deaths from this fell disease in April, 1864, was 35; in March, 1865, 16; while in April, 1865, only 4 died from small-pox. These are all reported from the West Division.

DISEASES.

Asthma,	1	Congestive Fever,	1
Apoplexy,	2	Puerpural Fever,	2
Burned,	1	Spotted Fever,	2
Congestion of Brain,	2	Disease of the Heart,	3
Congestion of Lungs,	1	Inflammation of Brain,	5
Congestive Chills,	1	Inflammation of Bowels	12
Cholera Infantum,	1	Inflammation of Lungs,	22
Colds,	4	Inflammation of Kidneys,	1
Consumption,	36	Jaundice,	2
Croup,	11	Killed,	3
Cramps,	19	Liver Complaint,	1
Convulsions,	13	Measles,	10
Childbirth,	3	Marasmus,	3
Cancer of Stomach,	3	Old Age,	7
Drowned,	2	Paralysis,	3
Diabetes,	1	Puerpural Hemorrhage,	1
Diphtheria,	4	Pneumonia,	1
Dropsy,	2	Quinsy,	1
Diarrhœa,	2	Cerebro-Spinal Meningitis,	3
Erysipelas,	2	Suicide,	2
Found dead,	2	Small-Pox,	4
Bilious Fever,	3	Stillborn,	10
Lung Fever.	2	Teething,	4
Nervous Fever,	2	Unknown,	7
Scarlet Fever,	8	Whooping-Cough,	3
Typhoid Fever,	8		
Water on Brain,	1	Total,	250
Typhus Fever,	2		

Ages of the Deceased.—Under 5 years, 102; over 5 and under 10 years, 21; over 10 and under 20, 5; over 20 and under 30, 35; over 30 and under 40,

22; over 40 and under 50, 8; over 50 and under 60, 16; over 60 and under 70, 14; over 70 andunder 80, 7; over 80 and under 90, 2; stillborn, 10; unknown, 8. Total, 250.

NATIVITIES.

Chicago,	125	Scotland,	2	Italy,	1
Canada,	4	Sweden,	3	Illinois,	2
Colored,	5	France,	1	Other States,	42
Belgium,	1	Germany,	23	Unknown,	6
England,	5	Holland,	1	Wales,	1
Ireland,	25	Norway,	3		
Total,					250

COMPARATIVE STATEMENT.

The following table shows the comparative number of deaths in the several divisions of the city for the month of April, 1864, and April, 1865:—

April, 1864.		April, 1865.	
South Division,	117	South Division,	100
West Division,	108	West Division,	93
North Division,	70	North Division,	57
Unknown,	3		
Total,	298	Total,	250

French Medical Students.—The number of students at the Paris School of Medicine for the present session, without including upwards of 100 foreigners, amounts to about 2000; being less by 142 than the number registered in 1863, when the new students entered in the books of the Faculty amounted to 357, whereas in the past year they were only 327; a small difference, it is true, but which shows, as in this country, a gradual and steady decrease in the numbers of the medical profession. The rejections average one in six.

Dr. Livingstone, the indefatigable medical explorer, is said to have devoted himself to a renewed series of African expeditions, and is planning a journey from the East Coast to the district lying between his most northern point on Lake Nyassa, and Burton and Speke's southernmost on Lake Tanganyka.

An Ounce of Quinine at a Dose.—Dr. Taussig, in a letter to a friend in London, relates a singular fact which occurred in Rome, where he resides, in December last. It is as follows:—

Dr. Hayler, a military medical man, visited in barracks a soldier, suffering from relapse of ague, and administered to him a small dose of sulphate of quinine. At the same time, he directed a man to fetch one ounce of the same remedy from the hospital, in order that he might have it in readiness for any emergency. The man received the bottle; but, supposing that it was ordered for the patient just mentioned, he took it to him.

In the presence of their comrades, they put the whole into a cup, adding sufficient water to make a paste of it; and the patient, although he found the medicine uncommonly bitter, did not leave off until he had swallowed it all.

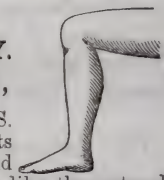
Dr. Hayler, on learning that this enormous dose had been taken, at once visited the patient. The most careful investigation left no doubt of the fact; but, with all that, *incredibile dictu*, except a complete deafness and a kind of stupor, no other bad effect ensued, and no antidote was administered. He was directed to the hospital, where he remained for a week under observation, and left the establishment in the best state of health. The ague disappeared, probably never to return. I saw the man myself; he is a Swiss, named Albitz, aged 30, of small stature, and of a strong constitution.

It was not to be supposed that there was any important adulteration of the remedy in question, as all such preparations are subjected to a chemical investigation before they are admitted in the hospital dispensary.—*Medical Times.*

ARTIFICIAL LEGS FOR SOLDIERS.

U. S. GOV. ARTIFICIAL LEG DEPOTS:

CHICAGO, ILL. ST. LOUIS, MO.
CINCINNATI, O. ROCHESTER, N.Y.
And 658 BROADWAY, NEW YO R,



WHERE the Government furnishes the U.S. Army and Navy Leg to Soldiers Gratis, or its value applied on the Anatomical Ball and Socket-Jointed Leg, which has lateral motion at the ankle, like the natural one.

DOUGLAS BLY, M.D., *U.S. Commissioner.*

☞ For Instructions address Dr. BLY, at the nearest Depot. ☜
Citizens are furnished at the same Depots, on private account.

DR. MOTT ON ARTIFICIAL LEGS.

NEW YORK, FEBRUARY 10, 1860.

When the Palmer leg was invented, I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

FIRST. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

SECOND. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

THIRD. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

FOURTH. The springs are made of India-rubber, and imitate more closely the action of the muscles.

FIFTH. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

VOL. VI. JUNE, 1865. NO. 6.

Original Contributions.

ARTICLE XVIII.

REPORT OF THE SPECIAL COMMITTEE ON DISEASES OF THE EYE.

By E. L. HOLMES, M.D., of Chicago.

Presented to the Illinois State Medical Society, May, 1865.

As Chairman of your Committee on Diseases of the Eye, I would most respectfully report that I have received no communications either from members of the profession at large, or of this Society. This is to be regretted, for diseases of the eye are so prevalent in this State, they are the cause of so much misery, that they are certainly of sufficient importance to awaken special interest in every one devoted to the relief of physical suffering. This subject should not attract the attention of specialists alone. Whatever may be said in reference to the necessity of specialties, it is true there are certain classes of diseases of the eye which should be carefully investigated by general practitioners in the country, for upon them alone can patients suffering from these diseases depend for aid. These classes of disease are important, because they are common, and, if neglected, so often result in blindness or injury of vision. Other classes of disease, on the other hand, require more experience in observation, and practice in their surgical treatment, than most medical men can possibly acquire in their ordinary

routine of labors. The operation for extraction of cataract, for artificial pupil, the diagnosis of certain forms of diseases of the choroid or retina, and the use of the ophthalmoscope, require long and careful practice on the part of the student.

The science of medicine is too broad for any one to cultivate with success the whole of its wide domain. For this reason, no one can become really distinguished for skill and knowledge in all the different departments of medicine and surgery. On the contrary, nearly all those who have made most important discoveries, who have written works which are regarded as standard authorities in any branch of our science, have been those who have concentrated their energies upon one class of subjects. In Europe the position of specialists in our profession has been established beyond reach of criticism. In this country there seems to be less inclination on the part of the profession to recognize the necessity, or even advantage, of subdivision of labor in the practice of medicine. This prejudice exists, undoubtedly, in consequence of the ignorance and questionable character of a very large proportion of men engaged in the treatment of diseases of special organs. But specialties are no more responsible for this evil, than the science of medicine is responsible for the number of charlatans that pretend to worship at its altar.

The eye and ear are confessedly organs, of which the anatomy and physiology, with the treatment of their diseases, are not well understood by the vast majority of our profession. This arises, not from any particular difficulty of the subjects, but from a want of interest. The fact that a physician may become distinguished as a practitioner, and as a man of science, without a knowledge of ophthalmology, seems to foster this neglect of the latter, for it is well known that while affections of nearly every other organ affects the general health, comparatively few diseases of the eye or ear have much influence upon general diseases of the system. It seems scarcely just that members of the profession, who absolutely neglect the study of diseases of the eye and ear, should discountenance the efforts of those who find interest in ophthalmic science alone, sufficient

to employ their best energies. Fortunately, as the profession recognizes the unlimited field of labor which the science of ophthalmology presents, there is less prejudice against well-educated specialists.

In reference to sympathetic ophthalmitis, and conjunctivitis, as it exists in this State, we would now add nothing to our former report, although we had hoped members of the Society would contribute some new facts regarding these diseases. At some future time, we may recall the attention of the Society to these subjects.

There are a few points in the diagnosis and treatment of iritis, which seem of sufficient importance to present to this Society. Inflammation of the iris is not an uncommon disease, and is not unfrequently misunderstood, and consequently maltreated by well-educated physicians. From the fact, that when left to nature, or when subjected to improper treatment, it almost invariably terminates in total or partial loss of vision, it is highly important that an early and correct diagnosis should be established. Those who have not had considerable experience in this disease, occasionally find difficulty in forming a diagnosis, from the fact that the disease is sometimes accompanied, almost from the first, with severe inflammation and œdema of the conjunctiva. One of the most important symptoms which can aid the practitioner in recognizing the disease, in many obscure cases, is the great indistinctness of vision, which cannot usually be accounted for by the degree of congestion of the mucous and sub-mucous membrane of the globe. When with this symptom, the character of the neuralgic pain in and around the eye, with the general appearance of the pupil, leave any doubt regarding the nature of the disease, a few drops of a solution of atropine, or one-eightieth of a grain of the salt itself, introduced between the lids, will usually remove all doubt, by the slow and irregular dilatation of the pupil.

The Society is well aware that, in the treatment of iritis, mercury has long been considered as the all-important agent. The experience, however, of several well-known oculists has shown that the disease may be treated successfully without it.

Although we have not discarded the remedy in the treatment of iritis, we are confident it is of secondary importance, as compared with atropia. This remedy should be applied either in the form of solution, or in substance, at the very earliest stage of the disease. It not only dilates the pupil, and thus prevents exudation from the pupillary edges of the iris from being deposited on the central portion of the lens, but it seems to exert a direct influence in reducing inflammation. Pain should be subdued, especially at night, by anodynes, either internally or in the form of sub-cutaneous injection near the eye. Although, instead of mercury, iodide of potash and turpentine have been used with great success by some, oculists generally have not ceased to place great confidence in mercury. The great objection to this remedy is not so much in its moderate use, as in its abuse. We are convinced, that with the early and free use of atropine, the profession will be inclined to administer mercury in much less quantities than usually given.

As the subject of cerebro-spinal meningitis has excited, of late, the attention of the profession, it may be a matter of interest to state that I have observed, during the past year, two cases of destructive choroiditis, dependent upon this disease. It is well known that several diseases, as small-pox, typhoid and puerperal fever, erysipelas, and serious affections of the heart, lungs, and liver occasionally develop acute or sub-acute choroiditis. We have already observed two cases of choroiditis, complicating severe erysipelas of the head and face.

In one of the former cases, in a child three years of age, the disease seemed to have been developed in one eye during the cerebral affection, and continued after the recovery from the primary disease as a sub-acute inflammation of the choroid and iris, which induced sympathetic ophthalmitis in the other eye. The child, when brought to my observation was totally blind.

In the other case, a boy seven years old was affected with choroiditis in the right eye. Six months after recovery from the primary disease, I found the globe slightly atrophied, and tender on pressure, with a calcareous lens attached to the iris. There was considerable irritation and photophobia in the other

eye. Although, I believe, in a majority of such cases, the extirpation of the eye first affected is, in nearly every respect, preferable to any other operation, I removed a portion of the iris and extracted the calcareous mass through a lineal incision in the cornea.

Two cases of paralysis of the muscles of the eye, following diphtheritic affection of the throat, have fallen under my observation. In one case, a female of middle age had suffered a dangerous attack of diphtheria. During recovery, the muscles of the soft palate became paralyzed, and soon after the muscles of both eyes. Two months after the attack, the muscles of the throat had nearly regained their normal power. The muscles of the eyes, however, remained paralyzed; the globes were absolutely motionless; the upper lids retained their normal movements; the pupils were somewhat dilated, and the power of accommodation quite imperfect. Under the use of iodide of potash for three weeks, the affection of the eyes and throat disappeared.

In the second case, the paralysis was confined to the third pair of nerves, and branches of the seventh pair, of the right eye, causing ptosis with extreme external strabismus, and paralysis of the muscles of the right side of the face.

There are some obscure points in the connection between Bright's disease of the kidneys, and certain affections of the retina, which, we believe, merit the attention of the Society, as giving scope for investigation.

What form of albuminaria is most liable to complication with fatty degeneration of the retina? How large a proportion of patients affected with albuminuria suffer from amaurotic symptoms? It is worthy of notice that in these cases of retinitis, the affection of the kidney can be diagnosticated with almost absolute certainty, by the ophthalmoscopic appearances of the retina alone. During the past year, I have been consulted in two cases of amaurotic disease of the eye, in both of which the ophthalmoscopic appearance of the retina led to the suspicion that the patients were suffering from albuminuria. The examination of the urine confirmed the opinion.

There are several modifications in important operations upon the eye worthy of the attention of the Society, but I would prefer to report upon them at some future time. I will, however, briefly allude to a modification in the operation for the extraction of hard cataract. It is well known that two of the principal dangers in the extraction of hard cataract, consist in injury of the iris by the passage of the hard lens through the contracted pupil, and in the presence of fragments of cortical substance of the lens remaining in contact with the iris. The modification to which I refer, and which, I believe, was first introduced by GRÆFE and MOOREN, consists in tearing out a portion of the iris, as in the operation for artificial pupil. This enlarges the opening through the iris sufficiently to permit the passage of the lens without seriously stretching the circular fibres of the iris. Moreover, the facility for removing all the fragments of the cortical substance is increased. The extraction should be performed in the usual way, at a period of about four weeks after the preliminary operation upon the iris. This modification in extraction of cataract has been highly recommended by several eminent ophthalmic surgeons. I have operated in four instances in the manner described, in all of which, the most favorable results of the operation were, undoubtedly, to a great extent dependent upon the *readiness* with which *every portion of the lens* was removed.

After operations of extraction, I have, for some time, followed GRÆFE'S advice, to cover the eye with a soft cushion of lint, equally distributed over the whole opening of the orbit, and hold it quite firmly in place, by means of a band around the head. This serves to retain the edges of the cornea in place; to prevent general congestion of the eye, and *especially of the choroid*, which is liable, after such operations, to suffer congestion and inflammation, in consequence of the reduction of intra-ocular pressure.

There are two or three subjects of general interest to the profession, relative to the cultivation of ophthalmic science, to which I would call your especial attention:—

Since we last met, there has been organized, in New York,

an Ophthalmological Society, composed of many well-known oculists of our country. There is talent and experience among its members, sufficient to secure the annual publication of most valuable monographs, which cannot but awaken increased general interest in our profession in ophthalmic science.

During the past year, the general government has established and supported in Chicago, a large hospital for the treatment of soldiers affected with diseases of the eye and ear. This hospital secures for medical students most valuable opportunities for receiving clinical instruction, at the lectures of the surgeon in charge, Dr. J. S. HILDRETH.

The Chicago Charitable Eye and Ear Infirmary, No. 16 East Pearson St., continues with increased prosperity. The institution has come in possession of a commodious hospital building. Liberal contributions, principally from benevolent citizens of Chicago, have been made for its support. Since the opening of the Dispensary of the Infirmary, in 1858, more than two thousand two hundred poor patients have availed themselves of the treatment provided by the institution. The Infirmary has been incorporated by a special act of the General Assembly of the State of Illinois. The facilities for clinical instruction will be extended, as the growth of the institution may permit.

ARTICLE XIX.

HYPODERMIC INJECTIONS FOR THE OBLITERATION OF VARICOSE VEINS. A CLINICAL LECTURE.

BY E. ANDREWS, M.D., Prof. of Surgery in Chicago Medical College.

The question of the best method of obliterating varicose veins is still asked with great interest among practical men, because there is great discrepancy of opinion among the standard works on the subject.

The three methods of ligature, caustic, and hypodermic injection, are the ones between which we usually have to choose.

Of these, the ligature is doubtless the most dangerous. Owing to the irregularity of the veins, and their numerous branches, it is practically impossible to ligate extensively without occasionally transfixing some venous trunk or branch, and passing the needle and ligature through it instead of under it. This makes a fistulous channel at once from the external air to the interior of the vein, and indeed carries a small quantity of the air enclosed among the fibres of the ligature into the vessel, both of which circumstances favor decomposition, erysipelas, and pyæmic phlebitis. On this account occasional deaths follow the operation, and surgeons have a well-founded dread of it.

To avoid this, some prefer the use of caustic. Prof. Gross advises that a mixture of equal parts of caustic potash and quicklime be made into a paste with alcohol, and applied in small spots over the veins, leaving it on from ten to twenty minutes, until an eschar is formed, reaching to the vein. Gross thinks this course to be quite safe. It has the advantage of not laying the vein open to the air, and though ulcers formed by the fall of eschars may sometimes provoke erysipelas and pyæmia, as even a pin scratch may do in persons strongly predisposed to it, yet it is a rare occurrence, and the procedure must be reckoned as safe as any minor operation in surgery. The practical inconveniences of the method are the following: 1st. It often happens that some of the caustic patches fail to reach the vessel, and after weeks of delay a repetition of the process is necessary. 2d. The issues formed by the caustic require several weeks to heal. 3d. The caustic plan is not applicable to erectile tumors, especially those on the face and neck. It is most successful in common varicose veins of the legs.

The third method consists in the introduction of a solution of perchloride or persulphate of iron into the vessels by the means of a fine-pointed hypodermic syringe. To accomplish this, the limb is ligated as for venesection, in order to distend the vessels. The point of the syringe is inserted at various places, and at each spot three or four drops of the liquor ferri perchloridi, or of Mansol's solution of the persulphate are inserted.

the clots, and were effectually cured without a particle of suppuration.

CASE III. An infant, four days old. This child was born with an erectile tumor upon the back of the neck, which speedily grew to the size of an egg, and threatened to increase still more. It might, from its location, have been easily excised, but, from its depth and breadth of base, I feared more hemorrhage than would be safe in a new-born infant. I therefore inserted ten drops of mur. tinct. of iron with the hypodermic syringe, passing it through the tumor in various directions. This at once converted it into a hard, knobby mass, with most of the veins well obliterated. After a few weeks, however, some of the remoter corners of the tumor proved still vascular, and required two additional injections. The result of the repetition was to make a small abscess in the tumor which discharged, after which the whole mass shrivelled away to a small fleshy knob.

CASE IV. A young man, aged 18 years. He had several deep nævi involving in the tumors, the whole thickness of the left cheek, and part of one lip, and making a tumor $2\frac{1}{2}$ inches long on the side of his neck. I inserted about twenty drops of the mur. tinct. of iron into each of these tumors, without any anæsthetic. They were converted at once into hard instead of soft swellings. Some inflammation followed, but no suppuration, and the masses began to shrink away, when the patient left for home, apparently cured.

I believe this method to be the best known for vascular tumors, and much safer than the ligature, in the common varicosities of the leg. It has promptness and certainty in its favor also. I do not believe that either this operation, or the use of the caustic, nor any other operation in surgery, however trivial, can be made perfectly safe from pyæmic phlebitis, if indiscriminately practiced upon patients in a decidedly aplastic and erysipelatous diathesis. When patients are in such a state of the general system, any scratch or pimple may give origin to fatal erysipelas or pyæmia.

But it should be borne in mind that this matter is very much

The blood at the place of insertion is instantly formed into a hard small clot. The vein contracts upon it and is from that moment obliterated. The puncture, being extremely minute, admits no air, and no fistula is established. The clot seems to be imprisoned by a plug of plastic lymph on either side of it, and is usually absorbed without any suppuration, leaving the patient cured. In erectile tumors this is by far the best of the three methods.

The following cases may serve to illustrate the subject:—

Case I. A woman, aged about 50 years. She had a large erectile tumor, of about three inches in diameter, upon the top of the head. It was arterial rather than venous, as was shown by its distinct pulsations. Part of the thickness of the skull was absorbed beneath it, giving an excavated feeling as the finger was pressed under the edge of the base. As it was rapidly growing, it became necessary to attend to it at all hazards. I first tied all the arterial trunks leading to it, but found that the collateral circulation still kept up the tumor. I therefore took a hypodermic syringe, and inserting its pipe in various directions in the tumor, left within it fifteen drops of the liquor ferri perchloridi. The result was an instantaneous knotty hardness wherever the solution was lodged. After a week, I began to fear that the first injection would not be sufficient, and as the patient began to be in great haste to return home, I made an effectual end of the disease by inserting about thirty drops more. The result of this haste in the treatment was to create a smart inflammation, followed by an abscess in the tumor, which discharged a mixture of pus and black clots, after which the whole mass shrivelled away and was cured.

Case II. A laborer, aged about 35 years, troubled with varicose veins, and an ulcer on the right leg. In this instance I determined to test both the caustic and the injections. I therefore applied the caustic over part of the veins, and inserted the perchloride of iron in solution into the others. The caustic was left on twenty minutes, and was measurably successful in places, but in certain portions failed to obliterate the vessels. The veins which were treated by the syringe, shrunk at once upon

under our control. If the patients have their constitutions well prepared beforehand, by keeping them in a current of perfectly pure out-door air for a few days, both night and day, and by giving freely the tincture of iron, and if the same management be kept up during the cure, erysipelas and pyæmia will be almost an unknown accident. But, if they sleep in crowded houses, or in small rooms with closed windows, from the fear of colds, then these surgical scourges will occasionally take their victims from every class of injuries and operations, and no skill can wholly avert the consequences of the folly in breathing impure air.

ARTICLE XX.

EPIDEMIC ERYSIPELATOUS FEVER AT WAVERLY, ILL. Read to the Meeting of the Illinois State Medical Society, May, 1865.

By R. E. McVEY, M.D., of Waverly, Ill.

Mr. President and Gentlemen:—The paper which I shall read to you, is a brief history of an epidemic of erysipelatous fever, which occurred in and about the vicinity of Waverly, which is located near the central part of the State.

The topography of the country is high, rolling prairie, with a fine loamy soil, slightly mixed with sand; and occasional streams to drain the country sufficiently; with timber on the North and West to break the great north-western winds. The water used for domestic purposes, is obtained from wells, at the bottom of which are found a continuous bed of slate and sandstone, mixed with occasional streaks of stone coal.

The country is all in a high state of cultivation, and apparently there is no more cause for epidemics there, than in any other portion of the country. But during the winter of 1864, we had an epidemic of cerebro-spinal meningitis, which proved very intractable; and through the summer we were troubled with an epidemic of scarlatina; and when cold weather made its

appearance, erysipelatous fever, which has far exceeded in fatality even cholera itself.

The cause of the epidemic seems to be obscure, but is supposed to be some atmospheric admixture, which is wholly unaccountable, so far as I know. The weather was dry and cold, mercury ranging from 32° above to 10° below 0; and no rain, scarcely, has fallen since November last, 1864, until March, 1865, making, upon the whole, a winter of the most uniform temperature, dry and pleasant, I have seen for many years, not varying from one extreme to the other, as is usually the case.

I am aware that the cause is said to be the result of the decomposition of animal and vegetable matters, the poison finding its way into the lungs with atmospheric air, or some other avenue. But it is impossible to say, for the reason that cold has the property of condensing vapors and confining them to the surface of the earth, therefore it would seem impossible for epidemics to originate from such a cause during protracted cold weather, which was the case last winter, however, it might be said that the toxic agent found its way into the system previous to the cold weather, and remained latent, and the depressing effect of the cold had something to do in developing and manifesting the disease. It is true that many features of the disease under consideration were characteristic of diseases arising from such a cause.

The symptoms were nearly the same as those of bilious fever; it resembles it in duration, and in its general tendencies; and, while I entertain such an opinion, I know that many good practitioners of medicine, diagnosed it to be typhoid in character, erysipelas, or erysipelas with a typhoid complication, so to speak. But when we contrast the disease in question with typhoid, we find they differ widely in symptoms, duration, and final results. It is claimed that the disease, like bilious, runs into typhoid after the seventh day, and especially if it runs on to the thirteenth or twentieth, but the same gentlemen would be rather slow to believe that typhoid runs into bilious. And why not, if both diseases are produced from the same

cause? The typhoid symptoms are as likely to be primary as secondary, and if bilious fever is disposed to run into typhoid, typhoid as surely runs into bilious.

Public opinion gives the physician no credit who treats a case that runs from fifteen to twenty days, unless he calls it typhoid. This is wrong. The physician who treats bilious fever, and does it successfully, is as much entitled to credit as though he treated typhoid. In typhoid fever, without entering into detail in regard to symptoms, the secretions are all increased; there is the pea-soup diarrhœa; the copious perspiration, and sudamina; the pulse is but little accelerated; the muscles become relaxed; the constitution of the blood is impaired, and the general tendencies of the system are to wasting and softening, which is evidenced after death by handling the liver, which is found to be easily torn; the muscles are softened; the bowels are ulcerated. Not so with the disease under consideration, the secretions are all locked up; the hearts actions are increased, at times so as to send the blood through the system without the proper secretion being made, therefore they are retained; the action of the skin, kidneys, liver, and bowels, are diminished, while the action of the lungs are increased, they having to throw off all the effete matter, in the shape of carbonic acid and water, in order to carry on respiration, and supply the system with oxygen. But then vicarious action does not suffice but in part, they cannot fully perform the functions of the kidneys and liver, the bile is retained, and, after a few days, unless proper remedies are used, the patient becomes jaundiced. If the constituents of the urine are retained any considerable length of time, coma is the result, and the general tendencies are to induration, inflammation, and suppuration, the disease running from seven to twenty-eight days. Unlike bilious fever, inflammation is apt to set in early about the tonsils, pleura, peritoneum, and external muscles of the neck or face; while in bilious fever, it makes its appearance, ordinarily, in the last stage of the disease, and is principally confined to the liver and spleen, and, sometimes, the meninges of the brain. But, during the epidemic of erysipelatous

fever, there was no part exempt. In some of the cases which I treated at the start, it was confined to the skin, but frequently it would dip down into the cellular tissues, and, occasionally, into the muscles themselves, forming large suppurating abscesses; and the symptoms were more favorable when it located itself, than when it did not. When it made its appearance upon a part, and spent its violence there, it mitigated the constitutional symptoms, lessening the danger of breaking down the constitution of the blood, which was inevitable, if it did not locate somewhere; when it did not, the chances were against the patient. But the question may be asked, how we would know that we had erysipelatous fever, unless it was located? The answer is easy:—by the quick pulse, and wandering condition of the mind at night. I have frequently found the pulse 130 per minute, with high delirium, at night, and in the morning find the pulse not above 100 per minute, and the mind clear, and the patient flattering herself that she was, in a manner, well—for the women seemed most liable to be attacked, though no age, sex, or condition of life was exempt. I treated it in the new-born infant, to extreme old age, both male and female, but when night came around, the quick pulse and the delirium returned, prostrating the patient in a fearful manner, which is peculiar to no other disease. Sometimes patients died of nervous prostration, within 48 hours after the attack, but more usually the disease came on with chilly sensations, lassitude, pain in the head, back, and limbs, the appetite was impaired, with indisposition to exertion, this state of things continuing from 24 to 36 hours, when the patient would be seized with a severe chill, intense thirst, nausea and vomiting, with restlessness, and a great sense of muscular prostration. The tongue was usually dry and coated; skin hot; pulse strong and frequent; urine sweet and high colored; and, as the disease progressed, the system became more and more exhausted, until the disease found a location, or broke down the constitution of the blood, and resulted in death.

The next question arises, does erysipelas ever attack the internal organs? My opinion is, that it does, when prevailing

epidemically, and I will here give a few cases as evidence without arguing the point:—

Case I. Was that of a lady, about 30 years of age, who was seized with a chill, which was soon followed with high febrile excitement, with nausea and vomiting. The nausea and vomiting was very intractable, having all the appearances of gastritis, which continued for about four days, when the stomach was suddenly relieved, and there was pleuritis of the right side for about two days, when the throat became suddenly involved, the diesase passing to the parotid gland, and spreading over the entire face and part of the scalp.

Case II. Was that of a young girl, in her seventh year, who was indisposed for a day or two, when she was attacked with shivering and severe rigors, alternating with flushes of heat. Next day there was tenderness over the umbilical region, and tympanites, which remained about four days, and had all the characteristics of peritonitis, when the patient was seized with nausea and vomiting. I examined the abdomen and found the tenderness had subsided. During the next 24 hours the nausea and vomiting had ceased, and the cervical muscles were swollen and tender, and the disease soon made its appearance upon the face and scalp.

Case III. Was that of a woman, about 35 years of age, who was taken, apparently, with pleuritis of a very violent character. There was no cough or expectoration, but the pain was severe, with great tenderness along the side of the chest, with high febrile excitement, great thirst, and a wandering condition of the mind at night. Therefore, I decided it to be erysipelas. About the seventh day, when I had given up all hope, the inflammation passed up into the throat, and from there to the face, and the patient speedily recovered.

But such happy results were not always to be looked for. When the disease attacked the peritoneum, mucous membrane of the stomach, pleura, or meninges of the brain, it was apt to remain there until the parts were destroyed, and death was the result. The inflammation had a strong tendency to suppuration, in the majority of the cases I treated of the erratic form

of the disease; abscesses would form about the angle of the jaw, and sometimes the tonsils had to be opened, being the seat of large abscesses. One patient, that died of peritonitis, I bled two days before death, but discovered nothing except that the blood was sizy and buffed, consisting of a large amount of serum and a small clot.

The disease did not seem to be contagious, but usually went through families. There were several cases that were thought to be produced by inoculation. In regard to treatment, the most successful was alteratives, tonics, stimulants, and anodynes. Local applications, in general, were nothing more than placebos. At the commencement of the disease calomel and jalap, and Dover's powder were given, to clear the intestinal tube, and were followed with tonics, after the bowels had been thoroughly evacuated. Quinine and the tincture of chloride of iron, was the tonic I preferred, administered during the day with wine or brandy for a stimulant. The chlorate of potassa was used freely, for its solution in the blood, to facilitate the absorption of oxygen into the system, which is so much demanded where there is much nervous prostration. After the disease has progressed two or three days, tartar emetic is an invaluable remedy, given in about half grain doses, just enough to produce emesis, it relaxes the system, and establishes all the secretions, better than even calomel itself, and there is no danger of ptyalism, which is much to be dreaded, and, especially, if there is a tendency of the disease to the throat; it overcomes the action of the heart, mitigating the force of the circulation, giving the kidneys time to perform their proper function; it arouses the bile cells in the liver to action, causing large quantities of bilious matter to be evacuated, especially where there is a bilious complication, which is apt to be the case either primary or secondary, but in the majority of cases it is primary—that is one of the first things that demands our attention. During the night, morphia enough to calm the restlessness and produce sleep is sufficient, more than that seeming to have a deleterious effect, rather than otherwise, locking up the secretions of the kidneys and liver after they have been

established, counteracting, to some extent, the effect of the alterative part of the treatment, which is the main dependence to be relied upon for the cure and restoration of the patient to health. As an alterative, the syrup of iodide of iron was made use of, but its action seemed to be too slow, or did not seem to control the disease as well as the tincture of chloride of iron combined with the sulphate of quinine. But I do not think it safe to depend upon the tincture of iron alone in the treatment of erysipelas while prevailing epidemically, and especially where there is a bilious complication, notwithstanding it has been lauded as the best remedy, and I have no doubt but it is an efficient remedy enough in the idiopathic form of the disease, but when there is a marked periodicity about the disease, I would prefer it combined with sulphate of quinine, as above stated. The sulphate of quinine being, in my opinion, an indispensable remedy as a tonic, and anti-periodic, and about the only trustworthy antidote to the poison of the zymotic or morbific agent that originates the disease, by fermentation, or otherwise, it should be omitted during the night, when the delirium is high, but through the day it can be given with impunity. The local use of the tincture of iodine, in the erratic form of the disease, has been highly recommended by physicians both in Europe and in the United States. But, after a faithful trial, it did not come up to my expectations. However, in one or two cases it seemed to do good in arresting the progress of the disease, yet it was impossible to say whether the iodine arrested it or the constitutional treatment, for I never trusted it alone but in one case, and that was a young infant, about two weeks old, that could not take a constitutional treatment.

The disease first made its appearance in the vagina, and over the perineum, and followed the inguinal region to the abdomen, which it entirely covered. The tincture of iodine was painted over the parts, first in a diluted form, and lastly in full strength, but did not arrest the disease, and there was no constitutional disturbance at the start, apparently, of any consequence. In the majority of the cases, where the face was attacked, the disease disappeared as soon without its use as with it, depending

entirely upon the constitutional treatment and the length of time after the attack before it located itself upon the face.

ARTICLE XXI.

NECROSIS AS AN EFFECT OF ERYSIPELAS.

By E. ANDREWS, M.D., Prof. of Surgery in Chicago Medical College.

The military amputations presented by returning soldiers display a remarkable number of cases of necrosis of the bones of the stump, and in almost every instance it is found that the patient had erysipelas soon after the amputation. The fact that the poison of erysipelas exerts a very destructive influence upon osseous tissue is a matter of daily observation by surgeons, but the phenomena of the military cases referred to are more curious and interesting than usual.

Case I. Col. McG——, of an Ohio regiment. He was shot in five places, in a hand-to-hand fight, shattering one arm and fore-arm frightfully. The arm was amputated at the middle, and the operation was followed by erysipelas. The erysipelas having subsided, he waited many months and then presented himself with a fistula in the end of the stump, in which the probe readily discovered a sequestrum. After anæsthetizing the patient, I proceeded to remove the fragment, which I determined to do without re-amputating. On making an incision into the end of the stump, it was found that the whole thickness of the humerus was dead, but that the periostum had produced a new shell of bone around it, and, between the two, a probe easily ran up four inches. The sequestrum was loose, but still held by irregularities of its surface, so that it could not be withdrawn. With a strong scalpel, I laid open longitudinally the soft shell of new bone, cutting it on two sides. With a little force, I then spread these two valves, so as to liberate the sequestrum between them and allow it to be drawn out. The valves were then brought together and dressed, and the cure perfected without shortening the stump in the least. The

sequestrum was about four inches in length, and tubular in form. When it was withdrawn, the medullary substance proved to be living, and remained in the wound attached by its superior extremity. The endosteum had produced no shell of bone like the periosteum, but there were numerous osseous spiculæ in the substance of the medulla.

Case II. A soldier of the 1st Ill. Light Artillery, was shot in the arm at Vicksburg, and suffered amputation in the middle of the humerus. After the operation he had erysipelas. Some months later, I examined and found a fistula and sequestrum. I operated in the same manner as in Case I., and found the condition of things exactly a repetition of that case in all particulars. The patient recovered without difficulty.

Case III. Was like Case II., an amputation of the arm followed by erysipelas, The sequestrum, however, was only an inch long, and was removed by a slight operation.

Case IV. Was an amputation above the middle of the arm, followed by erysipelas and necrosis. In this case, the necrosis involved the whole stump of the humerus, quite up to the shoulder-joint. It being presented to me for counsel, I found the patient extremely anxious to preserve the semblance of a stump, even if it was of no practical use. I therefore advised that the bone be removed by resection, saving as much periosteum as possible. This was done, and a good recovery ensued. I do not know to what extent the bone was renewed, as the patient removed to a distance.

Case V. Was shot through the upper-third of the humerus, and had erysipelas soon after. The limb was not amputated. The fracture united well, but caries ensued, involving the shoulder-joint, and accompanied with a bony anchylosis. In this instance I resected the shoulder, after which the patient recovered as usual.

Case VI. Was a gunshot through the ankle, for which the leg was amputated three inches above the ankle. He came to me after some months with a fistula in the end of the stump, and had observed several fragments of bone to pass out. On examination, the bone was found very much thickened and

indurated, with a small sequestrum in its very centre, and about six inches above the extremity. Finding that it could not be extracted satisfactorily, I was forced to make a new amputation in the upper-third of the leg. The patient recovered rapidly.

These cases show very clearly that it is seldom necessary to amputate a stump, on account of necrosis of the bone within it. It suffices, generally, to lay open the part and remove the sequestrum, when a good recovery will ensue. They illustrate, also, the destructive effect of the erysipelatous poison upon injured bones, and the consequent folly of hurrying wounded soldiers from the tents of the field of battle, where erysipelas is rarely seen, into large hospitals, where it is a constant attendant, and exerts its fullest and deadliest effect.

ARTICLE XXII.

PATENTS FOR SURGICAL INSTRUMENTS.

Mr. Editor:—It seems to me that it is time for the profession to take measures to stamp with its strong disapprobation the practice of members of our fraternity taking out patents for surgical instruments. I see in the Transactions of the National Association, and of the New York State Medical Society, articles accepted and published from two men who have been notoriously guilty of disregarding the professional etiquette in regard to this matter—men who accept and use all the discoveries of the rest of the profession, which have been given them free and without cost, and then having devised something themselves, they, with a meanness which is despicable, refuse to reciprocate, but declare that no professional brother shall be allowed to make use of their inventions without paying them for the patent right. This pernicious example is being followed, to some extent, even at the West.

These men ask, Why should not a surgeon be protected in his inventions, as well as a mechanic? Perhaps a few remarks

on this subject may serve to set the matter in a clearer light in the minds of those who ask the question.

Abstractly speaking, there is no immorality in a physician or a surgeon owning a patent, but practically there is an inexpediency in it. For, in the first place, it is unseemly. The physician and surgeon have to deal with human life, and the sacredness of that interest is such, that the whole profession, and the whole world, have agreed in the sentiment that the attempt to limit the use of any life-saving discovery is barbarous. It is something as though some clergyman should try to patent, for his own benefit, any plan capable of promoting the moral and religious welfare of mankind. Moved by this feeling, the profession, the world over, have worked with all their genius and energy, to make medical and surgical improvements, and each man has magnanimously thrown his results into the common free stock. Now the attitude of any surgeon who patents an instrument, is this:—He has received, free of cost, the right to use all the medicines and instruments which have been devised by the profession in the whole world; he uses them daily; if he is, in the least degree, an intelligent man, he practices all the while on ideas furnished him, without charge, by his brethren in all parts of the world; and then, accepting all these, he ungratefully refuses to reciprocate the courtesy, but patents his own petty devices, hoping to profit somewhat by preventing those who have furnished him all these advantages from receiving anything in return. It is fair to say that this is unmitigated meanness, and it is perfectly proper to exclude such men from the benefits of professional fellowship, since they despise its established courtesies.

There is another sting to their selfishness. Surgeons generally derive a majority of their business from the courtesy of other practitioners, who refer surgical cases to them. This is especially true of orthopedic surgeons, who are the chief sinners in the matter of patents. Now, to use all the discoveries of others free, to receive half their income from patients sent to them by the profession, and then to refuse the small quota of their own inventions to the very men who feed them, is con-

temptible. If there were any very great advantages to be gained by the patent, the meanness would be more excusable; but a patent surgical instrument scarcely ever pays the cost of production to a practitioner. The only way for a man to make such a thing pay, is to abandon his practice and take up the trade of instrument maker. He will then no longer be a surgeon, but a mechanic, and, as such, at liberty to patent his devices. The real way for a surgeon to make money, is to throw his improvements freely and magnanimously before the world for use, and reap the reputation which is so readily given to those who make valuable discoveries. This reputation always draws in tenfold more profit, by the increase of his business, than can ever be pinched out of the community by means of patent rights. I hope the National Association will take this matter up and bring the weight of its influence to prevent the further degradation of American Surgery in this respect. X.

Selections.

CLINICAL LECTURES ON SCRIVENERS' PALSY.

DELIVERED AT ST. THOMAS' HOSPITAL.

By SAMUEL SOLLY, Esq., F.R.S., Senior Surgeon to the Hospital.

LECTURE II.

Gentlemen:—Again returning to the subject of scriveners' palsy, I will relate another case, as it illustrates the main characteristics of the disease very forcibly, and also shows that the malady is more easily cured when detected early.

Mr. Q——, aged twenty-five, single. Parents are alive and healthy, and, on his father's side, very long-lived; he has a grandmother aged ninety-two. His habits have always been regular and steady, taking beer with his meals, but not spirits. He smokes very little now, and did not smoke at all when he was first attacked. He has been engaged in mercantile business since he was fourteen years of age, but previously to going into the —— Bank (which he did about five years ago), he was

in a large wholesale house. In this house he had less writing, and more active exercise. After he had been in the service of the bank about a year, he complained of an uncomfortable sensation in the upper arm of the right side, but not at first in the hand and fingers. This discomfort was succeeded by violent trembling in the muscles and tendons of the hand and arm, accompanied by a sensation of extreme fatigue in the limb, as if he had been using some violent physical exertion, rendering the arm and hand completely numbed. This numbness was so complete that he could pinch and prick the fingers without feeling anything. At last it became so bad that he could not hold his pen. When these symptoms first commenced they would all retire at night, and, with rest and sleep, he would feel pretty well in the morning; but ere long even this relief was denied him, and he commenced business in the morning with some discomfort. When, at last, the handwriting became so bad that he was ashamed of it, he sought my advice.

I recommended a complete change of air and scene, which, through the great kindness of those who claimed his services, he was enabled to effect. After the lapse of two months away from his writing occupation, during which time he was benefiting by the bracing sea air and bathing at Brighton, he almost entirely recovered. Since that time (beyond an occasional return of the symptoms in a mild degree, after using the pen without cessation for any lengthened period) he has not experienced sufficient inconvenience to lead him to fear a return of the disease. He has not so much writing to do now as formerly, and writes an excellent hand without difficulty.

The next case does not tell much for our medical treatment of such cases, though it shows that with rest they will recover. I have no doubt that the pen he speaks of was of service, but I do not believe that it would have effected a cure if it had been alone employed in the first instance. Coming after the rest, the pen was certainly of use. This patient shall tell his own story in his own words, which are:—

"I entered the service of the —— Bank in November, 1859. About the middle of 1860, I began to experience an involuntary pressure of my thumb upon the pen while writing, which increased until it was so violent as to be very painful, and I was compelled to hold the pen with my fingers, without using the thumb. The thumb then doubled itself into the palm of the hand causing much pain. These sensations were experienced only while writing, or when holding any article between the finger and the top joint of the thumb. At this time I was at

——, in Essex, and sought the advice of a surgeon, who gave me a liniment; but this not proving efficacious, I went to another, who also gave a liniment, and advised me to hold my arm under a stream of cold water, and have it rubbed with the hand in a brisk manner. This was done twice a day for some time. In November, I was removed to the head office, and I cannot remember whether it was before or after this that my thumb so far improved that I could hold the pen with my fingers without the contraction of the thumb upon the palm before complained of.

"On 21st Feb. 1860, I sought your advice in the matter, when you advised me to write as little as possible, and gave me a prescription (this was the third of a grain of strychnine), stating my case to be an attack of the scriveners' palsy, in a slight degree. On the 25th, you increased the dose (to the sixteenth of a grain), and directed me to leave off writing for a fortnight. This medicine caused twitchings of the muscles of the face, and on April 5th, you gave me another prescription (the twelfth of a grain of the bichloride of mercury). On the 16th of April, you advised me to try galvanism, and, by the kindness of Mr. Wood, of Cheapside, I was allowed to go to his shop and have the use of one of his instruments for a fortnight to try its effect. At first it appeared beneficial, but the effect was not permanent.

"During this time I had been writing with my left hand, but I began to feel an unpleasant sensation in my left arm, and you advised me that I must discontinue it.

"On May 9th, you gave me small doses of colchicum, and on the 28th, tincture of iron. The latter, however, I did not use, as I left the bank on the 31st, and went to my home in the country.

"In July, I started on a voyage to the Canary Islands, the journey out and home occupying six weeks. This did not appear to produce any especial good at the time, but I think it had a beneficial effect upon my general health.

"I re-entered the service of the bank in September, taking a post requiring but little writing; and in the same month I attended an orthopædic hospital, and was seen by Mr. —— and Mr. ——. One of these thought the extensors were withered, but the other differed from him. I was put under the care of Mr. ——, and various trials were made of a spring fixed on a glove, intending to prevent the thumb from contracting. But no success attended these efforts, and in Jan., 1862, I ceased my attendance.

"In February, I purchased Perry's 'Orthodactylic' pen-

holder, the peculiarity of which consists in three small plates affixed to the holder in the places where the thumb and fingers should rest. About this time my thumb rapidly improved, and in March I was able, partially, to resume my duties at the books. In April, 1863, I re-entered upon full duty at the desk, since which time I have experienced no inconvenience from the usual labors of the office. (He now writes an admirable hand.)

"A medical gentleman suggested to one of the clerks that the disease might, perhaps, be caused by the contact of the thumb with the steel pens which are used in the office (Mitchell's barrel pens); and since then I have used a quill over the barrel of the pen as a protection, and others of the clerks tell me they have derived benefit by doing the same.

"*Note.*—My habits have always been quiet and regular; no smoker; a teetotaler. In youth I grew fast, and was not of very robust health, though not subject to very severe illness. My father was afflicted with nervousness; mother healthy.

"C. W——, Dec. 14th, 1864."

Very little has been published on the pathology of this disease in the English language. Virchow,* in his handbook of special pathology and therapeutics, has an article upon it; but this, unfortunately, throws no light upon the treatment of this formidable disease. He confirms my opinion that the act of writing is dependent on the co-ordination of several muscles; saying, "Notwithstanding the combinations necessary for this purpose become, by degrees, so habitual that a conscious separation of the single acts is not possible to the mind, it appears as if the rythm of it, as it is learnt with difficulty, yet it in no way approaches the proper automatic movements—such as breathing, &c. Writing requires always a constant attention, which becomes more or less mechanical." This author also refers to an irritability of the upper dorsal region of the spine, sometimes induced by over-practising on the pianoforte, as indicated by pain in that region, and morbid contractions of the fingers. I have seen such cases, and may mention, as a digression from our consideration of its pathology, that I always prescribe nervine tonics, and rest from that kind of action of the muscles—but not entire rest of the limb; active exercise in the open air, with a hoop where it is possible, and calisthenic exercises of all kinds.

This aching in the spine may also be observed in connection with scriveners' palsy; and the fact is important, as I shall explain further on. Very little consideration of the subject of

* Virchow: Handbuch der Speciellen Pathologie und Therapie, vol. iv., p. 143.

scriveners' palsy is needed to convince us that the disease is not a simple paralysis of muscular power. The patient can call all his muscles into action; but he cannot bring them all into such *harmonious* action as to be able to write. What is the reason of this? I must not, even in a clinical lecture, take it for granted that you are all well up in the physiology of the brain and spinal cord, and I am sure I need not ask forgiveness of those who are, if I go a little into the A B C of the matter.

The physiological and pathological explanation of this disease is not given by Virchow. It must be sought in the newest discovered mines of nervous lore. I believe that I was one of the first to insist upon the distinct office of the cineritious and medullary neurine, and I felt that this was the more necessary, inasmuch as Gall and Spurzheim, those grand pioneers in nervine anatomy and physiology, omitted to adopt this view. They merely spoke of the cineritious neurine as the womb or producer of the white, not, as is now universally acknowledged, the real and sole source of power. Much has been discovered lately in regard to the physiological action of this grey neurine—the vesicular portion of the nervous system, and its relation to the tubular, especially as regards the spinal cord. The spinal cord, as I suppose most of you know by this time, is not merely a large nerve or large bundle of nerves—in other words, it is not merely a conducting instrument. It consists of the two kinds of neurine, the tubular or conducting neurine, and the vesicular or dynamic neurine; the white or tubular neurine, the grey or vesicular neurine. I remember when Marshall Hall first enunciated his views and discoveries regarding the especial power of the spinal cord in the production of what he called its excito-motory power, I said, "Well, if you are right, the instrument of that power is the grey matter of the cord." To which he replied, "I know not at all what is the instrument of that power, or in what part of the cord it is developed; I only know of its existence, and that I have proved." Since then the grey matter has been proved to have that function, but it has also been proved to have another distinct from it. It is this power and the machinery of it, so to say, that you must understand, if you do not do so at present, before you can understand what I believe to be the physiology and pathology of scriveners' palsy.

Ever since the days of Hippocrates, it has been known that if the fibres of the brain are torn through by an irruption of blood into their substance, the communication by which the will flows to the muscles is cut off, and the muscles supplied by such

fibres are paralyzed. Until a very late period it was supposed that the cerebrum and the tubular fibres of the spinal cord were the only instruments concerned in producing the action of muscles. Latterly, however, the physiologist has felt convinced that there must be some additional instrument concerned in the transaction; some instrument for co-ordinating or combining the action of muscles. The cerebellum has now, by almost universal accord, a portion of this power attributed to it. Schroeder Van der Kolk does not consider that all the credit is due to the cerebellum, but that the vesicles of the cord also have their share in it. I confess that I think so too. The exact proportion in which this power of co-ordinating muscular action is possessed by these centres, I suppose no one will at present pretend to decide. I expect that morbid anatomy, unveiled by the microscope, will clear up a great deal that is yet obscure. Romberg, who gives a short notice of writers' cramp in his work,* mentions a fact which shows that it may take its origin in the cerebellum:—"Paralysis of the upper extremity, dependent on a cerebral or spinal affection, frequently commences with impaired power of conduction in the motor nerves of the fingers, and consequent difficulty of writing. A man was under my care, whose disease lay in the cerebellum, and made its *debut* with an impairment in writing." It will only be by the accumulation of such facts that the mystery will be unveiled.

In the present state of our knowledge of the symptoms which attend scriveners' palsy, I think we are justified in believing that the disease commences in the cord. We find that most of the patients have felt some uneasiness in the lower part of the cervical region, and in the upper part of the dorsal. There is seldom any complaint of discomfort in the head, either in the occipital region (the seat of the cerebellum), or in the frontal. Still it must be allowed that the whole question of its pathology is very much in the dark, though I hope before long a *post mortem* examination may help us out of our dilemma. Without, therefore, now attempting to decide whether the nervous power which co-ordinates the muscles of the writer resides in the cerebellum, or in the spinal cord—though I am inclined to favor the latter hypothesis—we will consider the nervine arrangement by which it is in all probability produced; and though I shall describe it as existing in the spinal cord, still there is no reason to doubt that to a certain extent the same physical arrangement exists in both dynamic centres.

* A Manual of the Nervous Diseases of Man. By M. H. Romberg, M.D. Translated by Dr. Sieveking, for the Sydenham Society, vol. i., p. 321.

Lockhart Clarke and Schroeder Van der Kolk were, I believe, the first to explain clearly the nervous mechanism, if I may so express it, by which a group of muscles are made to act in such unison that complicated actions are produced in perfect harmony. The first-named gentleman originally demonstrated the actual connection of the nerve-tubules with the nerve-vesicles. Schroeder Van der Kolk followed it up and reasoned upon it.

We are so accustomed to see all muscular actions harmonious, that we neglect to consider the means by which this result is obtained. Let us consider the act of volition, and how it is carried out. I will state the matter briefly and dogmatically. Will springs from the action of the hemispherical ganglion, or cortical substance of the hemispheres of the brain. It descends along the white fibres of the hemisphere through the corpus striatum, crura cerebri, pons Varolii, and medulla oblongata, where it crosses from one side to the other, and then descends in the cord to the vesicular neurine in the interior of the medulla spinalis. Now I must have recourse to a diagram on the black board. You will see by this diagram that I represent a nerve-fibre (*a*) coming down from the brain, joining the nucleated vesicles (*b*), those ministers of power in the substance of the cord, the cineritious neurine. I think it right to repeat these terms frequently, in order that they may be household-words, engraved on the tablet of your memory. From these vesicles you see other and more numerous nerve-tubules (*c*) arising; these go to all the numerous flexors and extensors of the hand, which produce the act of writing. If the nerve-tube (*a*) went directly from the cord to the muscles of the hand, those muscles would act, but they would act spasmodically, not harmoniously. The instrument then which produces all this harmony, which co-ordinates the muscular action necessary to writing, whether good or bad, are the nucleated vesicles marked *b*. It is no sound argument against this theory that the act of writing does not come by instinct like the acts of the lower animals, but that the child has to learn to write—in other words, that these vesicles have to learn their co-ordinating duties. Is it not so with the brain itself? The child cannot reason and think accurately as soon as it is born. The ganglionic cells of the hemispherical ganglia have to be educated just as much as any other part of our living mechanism.

The observations of Schroeder Van der Kolk, to which I have referred, are given by him in the work published by the Sydenham Society, and translated by Wm. Davis Moore, Esq.,

M.B.* As I hope you will all take the first opportunity of reading this admirable treatise, I shall not give the author's words at length.

The main point on which you should have a clear idea is this: That the nerve-fibres which you trace with your dissecting knives into a muscle or group of muscles, do not spring directly from the brain, or run without interruption from it. These nerve-fibres spring from "a group of mutually connected ganglionic cells, which cells receive the impressions of our will along the anterior white columns." These impressions or stimulations being thus distributed uniformly over all the cells of a group, produce in all the motor filaments of a nerve arising from this group a uniform and simultaneous action.

The number of these anterior conducting filaments of volition must thus be proportional to the number of the group of cells, and the several combinations of which they are capable. The greater size of the anterior grey cornua in the cervical and lumbar enlargements of the spinal cord are accounted for by this fact.

If we accept this view of Schroeder Van der Kolk of the anatomy and physiology of the spinal cord, confirmed as it is by the earlier and later descriptions of Lockhart Clarke, we are, I think, justified in believing that the writers' palsy must depend upon the disturbance or actual disease of these spinal cells. I must not, however, enter upon this part of the subject in this lecture, but reserve it for my next.

LECTURE III.

GENTLEMEN:—Trusting that you have not forgotten what I told you in my last lecture, regarding the anatomy of the spinal cord, its groups of cells and nerves connected therewith, I will now endeavor to prove to you that these cells are frequently diseased, and that upon such disease, in all probability, the scriveners' palsy depends. Scriveners' palsy is not, so far as we know, a fatal disease; patients do not die from it, but they may die with it, and as we have not yet any recorded case of a *post mortem* after scriveners' palsy, I want you to look out for it. Nevertheless, it has been proved that these ganglionic cells are liable to disease—a disease which in its early stages cannot be recognized by the naked eye. The microscope must aid us. Thin sections of a healthy cord show all the beautiful anatomy, which my old pupil, Lockhart Clarke, has so per-

* Professor S. Van der Kolk on the Minute Structure of the Spinal Cord and Medulla, &c., p. 81.

fectly elucidated, that the Royal Society have awarded him the Royal Medal. In health, the microscope shows the vesicles plump and transparent, with a distinct nucleus and nucleolus. In disease, the microscope shows the vesicles no longer transparent, but more or less filled with granular matter, and the nucleus more or less obliterated. In Beale's "Archives," No. XIII, vol. iv., p. 41, you will find from the pen of Mr. Lockhart Clarke, an admirable account of this granular degeneration. Again let me repeat that this description does not apply to a case of scriveners' palsy, and you will, therefore, please to understand distinctly that the account I am going to give you of granular degeneration and granular disintegration of vesicular neurine, as described by Lockhart Clarke, does not apply, at the present time, to scriveners' palsy. If, however, it should hereafter be proved that I am right in my theory, then also will be proved that granular degeneration, in its early stage, may be arrested, and that fresh and healthy cells are reproduced, if these cells are left completely at rest to perfect the reproduction of the cell-structure, and not interfered with during the reproductive action, by attempts on the part of the patient to use the damaged centre of nervous power—in other words, by resting entirely the group of muscles which are called into co-ordinate action by such centres.

The first case in which Mr. Lockhart Clarke made this discovery of granular degeneration of nervous tissue in connection with paralysis, is described in vol. iii. of Beale's "Archives," beginning page 1. The whole paper ought to be, if it has not already been, perused by every practitioner of medicine and surgery. I referred to the facts in my lectures at the College of Surgeons the year before last, and I was surprised to find how many of that learned body of men were unacquainted with the discovery which had been made. It is entitled "An Important Case of Muscular Atrophy, accompanied with Disease of the Spinal Cord." I do not think we shall often see this title again. It implies that the muscular atrophy was the disease, and the condition of the spinal cord the accompaniment; whereas, the disease of the cord was the primary malady, and the muscular atrophy the necessary and invariable consequence of long-continued disease of its co-ordinating centre.

The only grounds upon which pathologists could base the idea of muscular atrophy consequent upon paralysis without disease of the spinal cord has been cut from under their feet by this discovery. Hundreds of such cases have been examined, and reported to be free from disease because the disease

was not patent to the naked eye. There is no longer any excuse for such nonsense. No *post mortem* examination of the spinal cord can be considered as conclusive, unless it is examined in thin slices under the microscope.

The important features of the case, and those which appear to me at all to bear upon the pathology of scriveners' palsy are these:—The patient was sixty-five years of age, leading a sedentary life, engaged in literary occupations. "In the end of 1855 he began to complain of neuralgic pains in the balls of the thumbs of both hands, which before long extended to the fore-arms and arms. After some months he was conscious of marked weakness in the hands more especially in the right, soon followed by perceptible diminution of size in the muscles of the thumbs and index fingers, which also became bent inwards and towards the palms, as an habitual posture. All this time, while his general health was good and his body corpulent, he made great complaints of severe neuralgic pains shooting down his arms into the hands and thumbs, and also of weakness of the back.------Nothing abnormal could be detected in the organs of the chest or abdomen. The kidneys and bowels acted regularly, and apparently naturally; he had no tenderness of the spine, no headache, and his mind, when not turned on his own condition, was clear and rational."

The further history of Dr. P.'s case, up to the time of his death, in January, 1861, (the disease lasted, therefore, a little over five years,) "which was preceded for a few days, and possibly caused, by an attack of acute laryngitis, is nothing more than a detail of the gradual increase in the intensity of the symptoms already noted, and the extension of the pains to the lower limbs and feet, where the sensation of intense heat and burning was constantly complained of, aggravated by the act of walking."

I shall not attempt to give you the detailed account by Mr. Lockhart Clarke of the *post mortem* appearances, but such a very brief abstract as will suffice for my present purpose. There was no disease of the pons Varolii or cerebellum. In a transverse section of the spinal cord, at the origin of the fourth pair of cervical nerves, three lesional spaces might be seen; and this diagram will explain their position. You will recognize the shape of the spinal cord, as shown in a transverse section, and the shape of the grey or vesicular neurine in its centre, like two irregular-shaped letters C placed back to back. The three white spots you see in the grey mass on the left hand are lesional spots, or spots of granular degeneration.

The next case in which Mr. Lockhart Clarke gives us the result of his inquiries, was clearly not a case of scriveners' palsy, but extremely interesting in every point of view. The case is most ably related by Dr. Thudichum, in the fourth volume of Beale's "Archives," page 26, and the brief abstract which I now mean to give you must not prevent your reading the whole account with care and attention.

The patient was forty-five years of age. The cause of disease was concussion of the spine, produced simply by a jump, the patient coming down heavily on his heels. He was stunned at the time, confined to bed for a few days, and then appeared to get quite well. "It was, however, soon perceived that a great change had taken place in his habits. Having been extremely fond of manly sports and exercises—rowing, cricketing, riding on horseback, dancing, and the like—he discontinued to take part in any of them, although he continued to go every autumn to the Scotch moors, for the purpose of shooting grouse." At the age of fifty—*i. e.*, five years after the accident—"while engaged in this latter sport, he perceived that his right leg had lost a part of its usual strength; that although he could perform with it every motion, yet he could not perform it in the manner necessary for the purpose; that he could not put the foot in the exact place where he wanted to put it. In other words, that he could will the action of the muscles of the leg, and that they would obey the will, but, the co-ordinating power being lost, he could not combine their action so as to walk.

Mr. Clarke published in the *British and Foreign Medico-Chirurgical Review*, vol. xxx., p. 219, another interesting case of paralysis, with muscular atrophy and disease of the nervous centres, which Dr. Radcliffe brought to his notice. In this case, he says, "the ordinary and inefficient method of examining the nervous centres must have failed to detect minute structural changes upon which the wasting palsy was actually dependent, and would, perhaps, have resulted in recording the case as one of simple muscular atrophy. In this case, the condition of granular degeneration had gone on to vesicular atrophy. The cells had shrunk; none of them were larger than the *nuclei* of the surrounding healthy cells; the majority were much smaller, without any traces of nuclei or distinct granular contents. These shrunken cells consisted of irregularly-stellate and apparently membranous bodies, which, in some instances, seemed shrivelled sheaths of healthy cells, or like radiating portions of the connective tissue." The accompanying diagram, taken

from this paper, shows the relative proportion of the healthy, plump, vigorous cells, and the miserable shrunken sheaths to which by disease they have been reduced.

Amongst other proofs that might be adduced in favor of my view, that the seat of the disease is central in the spinal cord, is the fact that the use of the left hand in writing instead of the right, will induce uncomfortable feeling in the latter. The explanation of which I suppose to be that in writing or drawing the action of the muscles of the left hand, the will having travelled by the conducting fibres of the spinal cord from the brain to the group of cells in the left half of the cord, these cells, on being called into action, excite their neighboring cells, through the medium of the transverse commissure, in the right side of the cord—*i. e.*, those which co-ordinate the muscles in the right, such excitement being manifested by the uncomfortable feeling described. One of my patients, when I spoke to him about the use of the left hand, said he would continue to use it if I wished, but he thought it would be better if he did not use either. He said, "If I write with my left hand, I feel an indescribable tingling feeling in the damaged hand, which does not subside on leaving off writing;" for instance, he continued to feel it whilst talking to me, having been writing half an hour previously. Occasionally he has the same kind of sensation in the right leg. He also says that he has had less of this discomfort since he has held the paper, on which he has to write, by strong clips instead of holding it steady by the right hand, and then, instead of keeping the right hand before him, putting it out of sight behind the body.

Regarding treatment, Virchow says the therapeutical indications to be followed in the treatment of these palsies are very doubtful. "In writers' cramp the application of all means of healing has proved fruitless. Neither narcotics, or stimulants, nor tonics, nor nervines brought any advantage; just as little did counter-irritants, embrocations, electricity, or baths of any sort. Where rheumatism was the cause, Russian vapor-baths, cold douche, electricity, and embrocations with oil of turpentine, were able to remove the complaint. The cutting through of the long muscle of the thumb was tried, with some result, by Stromeyer, in a case in which writers' cramp was conditional on this muscle. Dieffenbach performed the cutting through of the muscle several times, without being able to arrive at anything by it; Langenbeck, with a passing improvement. Nothing therefore remains but the application of different mechani cal appliances which make writing possible. Many such are

known, designed by Froschel, Cazenave, and others. One patient helped himself by means of placing the pen in a piece of wood bored through with holes, which he grasped with the whole hand, and so could regulate in writing.

As regards treatment, Romberg (*loc. cit.*, p. 323) says:—"The treatment hitherto pursued, both local and general, has been invariably ineffectual, so that the patients generally ceased from all attempts at cure, and remained satisfied with mechanical contrivances, the object of which was more or less to cause a pressure upon the skin and the subjacent muscles. Stromeyer also applied the principle of division of the muscles to the cure of the writers' cramp, and in one case, a brilliant result justified the anti-spasmodic reputation of tenotomy. As early as the fourteenth day after the subcutaneous division of the tendon of the flexor longus pollicis, the patient was able to resume his pianoforte-playing, and to write. On the other hand, it is to be observed that the operation was perfectly ineffectual in several patients upon whom Dieffenbach operated."

The following passage regarding treatment, in the relation by Drs. Adamson and Bell, of the case of Dr. P——, already referred to, is, I think, instructive:—

"As regards treatment, it may be mentioned that he made a long-continued trial of the following remedies, viz.:—iodide of potassium with sarsaparilla, strychnine, quinine, valerianate of zinc, phosphate of zinc, arsenic, tinctures of lobelia and lupulus, of cantharides, ergot of rye, actea racemosa, with various mineral acids. Throughout the progress of the disease, he employed occasional, and for the last two years regular, preparations of scammony and calomel. He had sedatives in every variety of form, externally and internally, and for the last three years took Battley's sedative solution every night, consuming about thirty ounces each year, besides trying chlorodyne, chloric ether, conium, henbane, lupulin, &c., &c. He tried galvanism and regular friction or shampooning of the limbs, wet bandages, &c. Subcutaneous injection of morphia was repeatedly tried, when pain was concentrated in any individual spot.

"Amongst other systems of treatment, he made a lengthened trial of the waters at Aix-la-Chapelle, and visited also several other German baths, including a water-cure establishment. He also placed himself for a time under a quack doctor, whose grand specific was systematic friction and kneading of the spine. These plans of treatment he discontinued only on being thoroughly convinced that they did him no good.

"Counter-irritation along the spine was also had recourse to,

but each and all without the experience of any, even temporary, relief. The diet was always generous, and with a liberal allowance of stimulants."*

No mention is made of complete and entire rest of the palsied hand when the disease first made its appearance. Believing, as I do, that this is the right course to pursue in the treatment of such cases, the fact that the employment of rest was not one of the remedial agents which so signally failed, should encourage us to employ it in any similar case.

My own experience then, in the treatment of these cases is very decided:—rest—entire rest from the occupation that has produced the disease. If the disease is recognized early, then two months' entire rest will arrest its progress; at the end of that time strychnine is of service, but it is injurious when given in the early stage of the disease and before rest. During the time of rest the health should be sustained and improved in every possible way. Fresh bracing air—mountain air if attainable—is of more service than all the tonics in the world. As regards tonics, they must be varied to suit the peculiarities of each constitution. Zinc, iron, and quinine are the tonics on which I rely most.

The following is one of the most striking cases of paralysis I know of, induced suddenly by little more than an hour's continued strain upon a nervous centre, confirming all that I have said regarding the controlling and co-ordinating power of the spinal cord:—A gentleman got into the five o'clock express train for Brighton. He was no sooner seated than he felt a strong desire to have the bowels relieved; but there was no help for it—the train started, nor did it stop until it reached its destination, at a quarter past six o'clock. All this time the desire to go to stool increased more and more, but he restrained it successfully by a violent effort. The moment the train stopped he sprang out of the carriage, when the sphincter ani relaxed, and the contents of the bowels were poured out into his clothes. The curious part of the case is, that he became paraplegic. The spinal cord had been over-exerted, exhausted, and paralyzed by the long-continued effort. In this case the brain, from which I suppose all must admit that the will emanated by which he desired to control his sphincter, did not give way. His intellect was not impaired, and the whole muscular system was not paralyzed, only that portion which is supplied by the lower portion of the cord. I regard this as identical in its pathology to scriveners' palsy, only that the destruction of the nervous centre was sud-

* Beale's Archives, vol. iii., p. 4.

den, not gradual. I do not know what treatment was adopted in this case, but, reasoning from analogy, I should have advised complete rest; that some arrangement should have been made to prevent his ever having to control the action of the bowels if he had retained in any degree that power.

Having told you all I know, or fancy I know, concerning the palsy, and all the speculations I have made regarding the pathological changes produced by, or productive of, the disease, I will ask you to carry on the subject. If you meet with any cases amongst the poor classes of our working-men, send them here, and I will give them a bed, and do the best I can to cure them. If you hear of any such cases—and mind you inquire for them when you go into the country for your Christmas holidays—get your medical friends to watch them; and if they can obtain a *post mortem*, ask them to send me the cervical enlargement of the cord (if they cannot obtain the whole), and we will make sections after the plan recommended by Lockhart Clarke, and test the validity of my views respecting its morbid anatomy. —*London Lancet.*

TUBERCULAR PERITONITIS, OR SCROFULOUS INFLAMMATION OF THE ABDOMINAL VISCERA.

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This is a chronic disease in the wildest acceptation of the term, and, withal, the most ambiguous. Why medical writers have so generally overlooked it altogether, or made but cursory allusion to it, is a mystery to me, inasmuch as they must have had some of these cases under their charge. Not less than four or five have come under my own observation. They are an eccentric and peculiar class of cases, and, so far as my own experience is concerned, have occasioned me more annoyance and perplexity than would be believed. I shall never forget the trouble my first patient caused me, and though at last I had the satisfaction of knowing that her disease had been incurable from the first, yet had I been fully advised of its nature, I think I might have withheld much useless medicine, and been spared many moments of needless anxiety.

When I opened the abdomen of the dead woman, the mystery was at once explained. I was amazed at the organic lesions that were revealed: bands of solidified lymph, in various stages

of organization, fastened and glued the abdominal organs in a confused and matted mass, putrid with fœtid pus; thousands of little elevated bodies, variously discolored by venous congestion, thickly studded every portion of the peritoneum, being more thickly grouped over the liver and stomach, the organs that occasioned the greatest distress. The folds of the omentum and mesentery were loaded with them, and were greatly swelled and altered in texture. These tubercles were of various size—most commonly of the size of small shot or mustard seed, and were deposited in the subserous structure under the peritoneum. She had never complained of cough or pulmonary disease—but to satisfy myself of the non-implication of the lungs, I made several sections of them, but discovered no tubercles or other sign of pulmonary disease. The whole force of the malady seemed to have expended itself in the abdominal cavity. She was sick some nine or ten months—that is, from the period of cessation of her menstrual flow, the time from which she had dated her illness. All of my cases were young women, ranging from 18 to 21 or 22 years of age; and in all the very first complaint was a suppression of the menses, which never returned throughout the subsequent progress of the case.

At first the patient does not feel sick or make any complaint, but having missed one or two catamenial periods, she becomes concerned, and applies for something to restore the lost uterine function. After a longer or shorter interval, other symptoms come; such as a feeling of discomfort, wandering pains in the abdomen, a severe stitch in the side frequently recurring, a fit of nausea or vomiting, or diarrhœa alternating with constipation. The pain is not lancinating, or of that character that distinguishes ordinary peritoneal inflammation, and is unattended by fever, unless it happen to be accidental or an intercurrent one. It is such a pain as a hysterical or dyspeptic woman is apt to have, consequently it is likely not to occasion alarm. The appetite continues good, with occasional interruption by nausea or vomiting. The skin is natural. In a word, the patient does not think herself very sick, and attributes any discomfort she may feel to her menstrual irregularity. After a time, the abdomen swells, and finally presents unequivocal ascites. The case is worse than had been thought. There is obscure organic disease of grave import, but what organ is the sufferer? Attention is naturally turned to the liver, and diligent search is made in this locality. All the abdominal viscera are inquired after in turn, according to their importance, in the hope of finding the affected organ, but in vain. We reëxamine with still greater

caution, till every gland, every function, every tissue whose derangement or disease might induce the result, however distant from the locality, have been questioned with the greatest caution and circumspection; yet with the same unrequited labor. There is no hepatic, renal, or cardiac disease that can be discovered; no history of an old peritonitis; no story of having "caught cold" by lying on damp ground—which means a sudden interruption of transpiration, the occasional cause of acute abdominal dropsy; whereas this affection of which I speak is chronic, and comes on without any assignable cause.

The ordinary remedies will generally remove the effusion, but fresh accumulations take place, and each successive time become more difficult of absorption. It continues to progress. Digestion becomes more interrupted; the nausea and vomiting more frequent; the abdominal uneasiness augments. The skin perhaps is dry, the tongue coated, the pulse quick, the urine scanty and high colored, the abdomen hot. If sudden pressure be made upon it, the recti muscles quickly contract, to ward off pressure from the underlying organs. Pain locates itself more intensely at a certain spot. To all appearances the case is now culminating. Inflammation has all at once revealed the hidden enemy: and what has been confused and tangled in the chain of morbid phenomena is suddenly understood and referred to inflammation of the liver, or of the stomach, or of the intestines, &c., &c., as the specialty of the symptoms may have determined.

The patient is now really, and is believed to be, dangerously ill. She is accordingly mercurialized, opiated, blistered, &c., as the symptoms may indicate or the emergency require. I do not think any one would bleed these cases. Presently the violence of the symptoms begins to abate, the fever to decline; the skins grow moist, the tongue clean, the urine clear and more abundant, and the bowels soluble; appetite returns, and the spirits rise. The patient begins to get strong, to sit up, to walk about; perhaps to attend to light household duties. But the rebound is not complete; the patient seemingly loiters on the threshold of health, and will advance no farther; the injury to the organism is too vast to admit of it. Some how, she wont get quite well. Presently there comes the miserable relapse. She complains of a pain here, or there, or there, till first one then another of the various abdominal viscera have been accused in turn of inflammation or other serious disorder; diarrhœa sets up its work of reduction, and what with deranged digestion and febrile irritation, the powers of the system are rapidly reduced —emaciation becoming daily more conspicuous.

If the hand be now laid on the abdomen it will be found intensely hot and drum-like; hectic is fairly set in, and this enemy allows the invalid no rest. But while life is thus hopelessly compromised and speedy death inevitable, yet, strange and incomprehensible, nature seems frequently to marshal her forces afresh and recover some of the lost ground. Thus, when daily expecting the death of the patient, we may hear of her getting better. But the effort is more spasmodic than formerly; if there was too much damage to important organs inflicted by the first attack of the disease to admit of recovery at that early stage of the malady, now more than ever is that end unattainable, as there has been fresh accessions of injury, embracing new organs and textures, perhaps equally necessary to the maintenance of life; therefore the counter-current soon sets in, till, finally worn out by combined hectic irritation and starvation, the patient passes out of life. Thus perished my first patient.

The second one died more quickly, seemingly destroyed by the violence of the excessive inflammation which the tubercles occasioned; she lived several months, and died suddenly of suppression of the urine, passing off in profound coma. For some time she had suffered from renal symptoms, discharging a small quantity of bloody urine, attended by considerable pain. A few days before the fatal issue, it stopped altogether. She was a colored girl, tall, good-looking, and of healthy appearance. A *most mortem* examination revealed myriads of miliary tubercles lining the cavity of the peritoneum. They literally covered the bladder and the kidneys, and were florid with the recent congestion. Very little adventitious membrane could be seen, but there was considerable bloody serum. The inflammatory action had not been sufficiently intense or prolonged for the evolution of this product. She died in the first stage. When it runs its full course, the various abdominal organs are bound, glued, and matted together by bands of this material, and very offensive pus may also be present. When the abdominal walls are fastened down upon the intestines or other viscera by adhesions, it may occasion tumors that give rise to great perplexity and error in the diagnosis. Having committed this mistake myself, I mention it to put others on their guard. It was the first case of this form of disease that came under my own observation, and on account of my inexperience was the source of more trouble to me than all of the rest combined. The patient was a young woman of 18 years. Her parents sent for me to ascertain the cause of her continued menstrual suppression—it was

now over three months since her last catamenial flow. The abdomen was also swelled. The suppression of the menses and the abdominal swelling had come on without any cause she could assign. She had a healthy look; her pulse was natural, her skin comfortable, and her appetite good. I wont say what was my suspicion—but when I came to examine the abdomen, to my infinite surprise I found that it fluctuated. Beyond a question, there was fluid within the cavity of the peritoneum, and a little pains assured me it was not ovarian. The abdominal walls were uniformly distended, and the fluid shifted according as she changed her position. But how came it there? This was a problem difficult to solve. She had never suffered from peritonitis, or any kind of intestinal inflammation; there was no disease of the liver that could be discovered, nor of the heart, nor of the kidneys, nor had it resulted from a sudden chill, nor was there any anæmia to add its suggestion. Then how was it occasioned? To say that it resulted from some disturbance of the equilibrium between peritoneal secretion and absorption, was to make it as indefinite as ever, unless I could trace it to a disease of the peritoneum *per se;* this I could not do, as there had been no former peritonitis nor present tenderness; therefore I adopted what I then considered as the most plausible conclusion—that it resulted from some obstruction of the portal circulation; and whether this was hepatic or extra-hepatic I was forced to leave for future determination.

I prescribed brisk saline cathartics, alternating with the compound diuretic pill of squill, digitalis, and calomel. Some eight or ten days afterwards, I found considerable tympanitis, and whilst I was sitting by the bedside conducting my examination, her mother approached me, and asked "why her abdomen sounded so hollow, if it was full of water?" I told her that it had been removed, and gas had taken its place; that the medicine had acted well, and her daughter was much better. This was a most sagacious woman, and I therefore was careful not to excite her fears, unless I could satisfy her curiosity; but to be frank and honest, the tympanitic condition was even a deeper mystery to me than the dropsy had been. I could not understand it. It seemed to me to be a most novel case; but I did not feel alarmed for her safety, as her general condition was good, and there was very little abdominal uneasiness—not enough to cause suspicion of inflammatory action. She had occasionally felt nausea, and had vomited once or twice. The discharges from the bowels were still copious. Her tongue was a little furred. Her appetite had also suffered impairment, but

there was no fever. She informed me that she was "very restless at night and could not sleep." I ordered a small pill, composed of equal parts of the mild chloride of mercury and opium, a half grain of each, morning, noon, and night; at the same time enjoining quiet, and simple but nutritious diet. She continued to improve, and was soon convalescent from her singular attack, as I believed, and I accordingly stopped visiting her. But I was mistaken, for she stopped short of complete recovery, and sent for me again, under a relapse, several weeks later. There had been a fresh accumulation of serous liquid in the cavity of the peritoneum. Of late she had suffered from irritable stomach, and was vomiting more than formerly. She was also constipated. There was considerable pain in the right hypochondrium, and pressure under the ribs greatly augmented it. At this point there was a feeling of distension, associated with deep throbbing pain. The pulse was excited, and she complained of thirst; the tongue was sharp, with red edges, and densely coated along its middle. I at last became fully satisfied that she was then laboring under acute hepatitis, and considering her former obscure symptoms, came to the conclusion that she had had the chronic or subacute form from the first, and it had betrayed itself by this sudden outburst or overt action; that somehow the ascitic collection was intimately associated with it, bearing the relationship of effect and cause. I accordingly treated her for acute hepatitis; I combated the most serious symptoms, and they were hepatic. She was many weeks in bed, and suffered much—had lost considerable flesh, and was broken down in body and mind, her face written over with the record of past suffering; she asked for articles of food fretfully, or with a sigh; she looked the confirmed invalid; she was better than she had been, but I dispared of her life. Wonderful to narrate, this patient began gradually and slowly the work of recovery. It was a long time before she walked her room with anything of ease or comfort. The serous collection, which had resisted every means made to dislodge it, suddenly disappeared of its own accord; so was it with other grave symptoms, one after an other departing as she continued to gain. She boasted of her appetite, of her returning strength, of her improvement generally. Alas! it was only a truce, for she very soon sent for me again, with worse symptoms than ever; this time she kept her bed till she died. Hectic now set in, to add to her debility and discomfort.

It was during this last phase of her malady that one day, whilst I was ascertaining the condition of her abdomen, I no-

ticed a tumor in the right iliac region; it fluctuated, and was about the size of a cocoanut, containing perhaps a quart or more of liquid. No position in which I placed her succeeded in dislodging it. It was evidently sacculated. I could not resist the conclusion that it was ovarian dropsy, and I blamed myself for not having noticed it before. But when did it come on? This she did not know, but said "she had thought she had been swelled on that side for some time." Her abdomen was intensely hot, and pressure gave her pain; her stomach was very irritable, and she vomited often; severe diarrhœa alternated with constipation. The last symptom I had noticed throughout her entire illness, and I believe it a very valuable one, as it was also present in an equal or less degree in the other cases. One day I was vastly surprised, on examining the supposed ovarian tumor, to find that it contained gas instead of a liquid. I was truly amazed. A few weeks after this she died, when I discovered the phenomenon had had its origin in the formation of an adventitious cavity, caused by singular adhesions of intestines, bladder, omentum, and abdominal walls. It contained gas and a little bloody serum. Outside of this cavity, everything was bound, glued, and tied together in a confused mass, fœtid with pus. It beggared all description. Nothing escaped; not an organ or tissue in this cavity but showed marks of disease. The wonder was how she had managed so long to survive such ruin. The same answer would apply here as is given in cases of tuberculosis pulmonalis, where the organic structure of both lungs is nearly entirely destroyed—that the morbid change has been gradual, allowing the system opportunity to accommodate itself to each successive injury, thus in a manner becoming habituated to diseased action.

In conclusion, I will add, that whilst this affection is probably a form of scrofula, yet the cases that have come under my observation had not previously given any evidence of strumous cachexy; on the contrary, the patients were healthy and well developed, and consequently I was little prepared for such a denouement.

A NEW MODE OF TREATING DISEASES OF THE CAVITY OF THE NOSE.

By J. L. W. THUDICHUM, M.D., M.R.C.P., Lettsomian Professor of Medicine of the Medical Society of London.

The treatment of diseases of the cavity of the nose has hitherto

been attended with very great difficulties, owing to the circumstance that the cavity is large, complicated by many sinuosities, interrupted by many thin bony and membranous projections, and therefore little accessible, and for the most part not accessible at all, to instruments by which growths might be removed, or topical remedies applied. The removal of excrescences from the lower and median nasal canal was yet the most successful of surgical operations, although it was frequently left incomplete, or remained unavailing, owing to the speedy return of the polypi. But the topical application of remedies for the treatment of acute and chronic affections of the nasal cavity, which is certainly the principal therapeutic requirement, and in many cases prevents the formation of polypi, could only be attempted by mechanical contrivances which were so objectionable to the patients, that after longer or shorter trials they had to be abandoned. I have had under my own care several important cases of affection of the nasal cavity, in which the mere possibility of cleansing the cavity of the nose would have been a great boon to the patients; others, in which I have no doubt the application of remedies, such as we are in the habit of using in conjunctivitis, would have effected a speedy recovery from painful and troublesome conditions. The only mode of cleansing the cavity of the nose which was then known in medical science, was by injections with a syringe; but, owing to the velocity with which the injected fluid touched the walls of the nose, this process always created much irritation, pain, sternutation, and lachrymation, and the patients mostly opposed the entrance of the fluid by expiratory efforts, which, indeed, were the only means they had of preventing the fluids from running down the choanæ and reaching the larynx. The mere effect of pure water upon the Schneiderian membrane being highly irritating, two causes combined to defeat the object of injections of water; and when medicines which might be supposed to have a beneficial effect upon the diseased Schneiderian were dissolved in the water, they, although perhaps better tolerated than pure water, could not be kept sufficiently long in contact with the affected parts to exercise upon them even such slight medicinal action as their necessarily diluted state permitted. There was a third application that could be made—namely, the introduction of medicines in the form of fatty or mucilaginous ointments. In one case, in which I endeavored to benefit a chronic ozæna—a residue of scarlet fever—by topical applications, a solution of sulphate of zinc in intimate mixture with lard had a most decided effect, the patient being much improved, though

not cured. But this application of ointment to the surface of the lower canal of the nose, and to a part of the median canal—which are the only portions that, as a rule, can be reached, even by clever manipulation—is the most objectionable of any, so far as its accompaniments of irritation and pain are concerned, sternutation and lachrymation being not rarely long continued after it, and the peculiar pain producing a reluctance on the part of the patient, which it is difficult to overcome in young and old people. All these applications, then, were partial, imperfect, irritating, and, consequently, unavailing to effect the desired end. Many cases of superficial ulceration ended in caries, embittering the life of the patients, and through the odor making intercourse impossible, and family relations troublesome; other cases of chronic inflammation ended in deformity of the external nose, and the formation of polypi in its cavity, and produced a constant false resonance of the voice; a number lasted throughout a lifetime, the nose being constantly a weak part, and capable of prostrating the patient at any opportunity which dust and wind might afford; others had consequences even more severe, and the specific ulcerations of the cavity of the nose only too frequently terminated in that sinking of its bridge which is the most painful proclamation of disease with which a patient can become afflicted. Then there were the convulsive affections produced by local irritation in the nose—those cases of fabulous sneezing in which hardly any remedy availed, even in diminishing the number of spasms in time, because the centre and seat of the irritation could not be reached by medical agencies. Truly dangerous were some cases of bleeding from the nose, in which the broken bloodvessels could not be reached by either styptics or mechanical compression, and could not be made to contract by contact with that most powerful of hæmostatic agents, ice or ice-cold water. Not a few cases of this kind terminated fatally, or required the most desperate measures to prevent the fatal end, such as plugging of the nose and choanæ with sponges or tinder; and these not rarely left a condition of anæmia in which other accidental diseases could put a stop to life with comparative ease, or which continued without the supervention of other diseases, enfeebling and considerably shortening the rest of the life of such patients.

All these difficulties, and many more which might be mentioned, are removed at one stroke, by the discovery of Professor Weber, of Halle:—that when one side of the nasal cavity is entirely filled, through one nostril, with fluid, by hydrostatic pressure, while the patient is breathing through the mouth, the

soft palate completely closes the choanæ, and does not permit any fluid to pass into the pharynx (a physiological fact thus far already discovered by E. H. Weber, of Leipzig, before 1847, and published in Muller's Archiv., 1847, pp. 351–354); while the fluid easily passes into the other cavity, mostly round and over the posterior edge of the septum narium, in some persons also through the frontal sinuses, and escapes from the other open nostril, after having touched every part of the first half of the other cavity of the nose, and a great part, certainly the lower and median canal, of the second half. By means of the application of this principle to the treatment of diseases of the nose, it is possible easily and frequently to wash the nasal cavity, to disinfect and deodorize it, to remove the sordes which accumulate so easily in it, and to apply to its surface a great number of beneficial medicinal substances, so as to prevent acute affections from extending, and to incline them towards a speedy recovery; to stop hemorrhages, allay irritations, and subdue, in a remarkable manner, chronic affections of the Schneiderian membrane, so as to reëstablish a perfectly healthy surface and normal condition of the organ of smell.

Of the medicinal solutions which may be applied to the cavity of the nose.—Although the solutions before enumerated act in a measure as alteratives, resolvents, and escharotics, and, therefore, rarely constitute a sufficient medical application by themselves, yet they are more frequently used for preparing the nose for the application of more energetic and specifically acting solutions. To this latter class belong the solutions of alum, sulphate of zinc, and sulphate of copper—the best astringents; the solutions of nitrate of silver, and bichloride of mercury—the most suitable alteratives; and the solutions of chloride of calcium, in which suboxide or oxide of mercury is suspended in a finely subdivided state, together with the bichloride solutions —the best specifics. Of stimulating solutions, a mixture of eau de Cologne with water or salt water is sometimes useful.

The probable concentration of these solutions can be surmised from the circumstance that the sensibility of the healthy nasal cavity stands about midway between that of the eye and the mouth. When the nasal cavity is completely filled with fluid, the specific sense of smell cannot any longer be exercised; even the solution of eau de Cologne is not perceived to be such when it once fills the nose. The sense of smell being thus entirely obliterated by the fluid contained in the nose, the reflex effects which substances may exercise by means of this sense are entirely absent; and the only impingement which the fluids

can produce is upon the filaments of sensitive nerves coming from the fifth pair. It is owing partly to this circumstance that comparatively strong medicinal solutions are borne by the nasal cavity without great secretion. Another circumstance favoring the application of stronger solutions, is the ready manner in which the healthy surface of the nose defends itself against irritating, chemically-impinging substances, by means of a copious flow of mucus. Excoriated or ulcerated parts lack this power of rapid secretion; and hence they are affected by medicinal solutions much more than the healthy parts of the surface of the nasal cavity. What is here stated is the general result of experience and experiment; but, at the same time, I must insist that the application of medicinal solutions in each case should be begun with the greatest caution, as individuals differ greatly in point of irritability of the nasal cavity. In the beginning, therefore, very dilute solutions of medicinal substances should be used, and their strength be increased gradually, after their effect has been well exhausted, by the use of greater quantities applied by a quick flow, or the use of smaller quantities in a slow current distributed over a longer time of contact.

Solution of Alum.—Half an ounce of roughly-powdered crystallized alum is dissolved in a small quantity of hot water, and the solution made up to one quart by means of cold and tepid water in such a manner as to ensure that the temperature of the solution should be below, but near to, blood-heat. In superficial ulceration, or blenorrhagic conditions, this solution is well borne. Ulcerated parts, which before its application were red, mostly appear as white patches after its application, thus showing that the effect of the alum on the ulcerated surface has been considerable. When I was desirous to manage with smaller quantities of solutions, I have sometimes mixed a little permanganate solution with that of alum.

Solution of Sulphate of Zinc.—From a scruple to a drachm of the sulphate of zinc, dissolved in a quart of warm water, together with half an ounce or an ounce of sulphate of soda or sulphate of magnesia, gives a suitable fluid.

Solution of Sulphate of Copper.—Of this sulphate also from a scruple to a drachm, mixed with half an ounce or an ounce of soda sulphate or magnesia sulphate, can be dissolved in a quart of warm water.

Solution of Acetate of Lead.—Of this crystallized acetate, from a drachm to two drachms, together with half an ounce or an ounce of crystallized acetate of soda, may be dissolved in a quart of warm water.

Solution of Nitrate of Silver.—Of this salt, not more than from half a grain to a grain should be dissolved in each ounce of water. A quart of water, therefore, in which previously from half an ounce to an ounce of nitrate of soda has been dissolved, may receive from sixteen to thirty-two grains of the nitrate. In particular cases the solution may be made stronger. The nitrate of potash is not so good as the nitrate of soda, because it has slightly irritating qualities. When it is necessary to use it in an emergency, when soda nitrate cannot be had, the solution should be more diluted.

Solution of Bichloride of Mercury.—The greatest caution is necessary in the use of this agent, as it has a tendency to produce excoriations on healthy surfaces. The first solution to be employed should be one containing five grains of corrosive sublimate in a quart of water, in which an ounce of common salt is also dissolved.

Solution of Chloride of Calcium with suspended Oxide or Suboxide of Mercury.—These fluids are the common phagedænic waters, or black and yellow wash, to which common salt has been added. Two drachms of calomel, twelve fluid ounces of lime-water, one ounce of common salt, and twenty ounces of common warm water, yield the black solution. One scruple of corrosive sublimate, one ounce of common salt, twelve fluid ounces of lime-water, and twenty fluid ounces of common warm water yield the yellow wash. These mixtures must be well agitated in the glass vessel while being allowed to run through the nasal cavity.

Sedative solutions.—Of prussic acid forty minims to the quart of warm salt-water, of tincture of opium two drachms may be taken. These drugs may be added to some of the above solutions of metallic salts. But if this is desired, it is better to substitute a solution of morphia for tincture of opium. The prussic acid is incompatible with the copper, silver and precipitated mercury solutions; it goes conveniently with the alum and common salt solutions.

Styptic or hæmostatic solutions.—Amongst these, ice-cold salt water, containing an ounce of salt to a pint of ice-water, takes the first place. When this, after having been continued for a considerable time, is insufficient to stop the hemorrhage, a fluid ounce of the tincture of sesquichloride of iron may be added to each pint of ice-cold salt-water.

Stimulating solution.—One ounce of eau de Cologne upon ten ounces of salt-water, is a useful stimulant. Strong spirit of wine may be taken in place of the eau de Cologne.

I have now fully, and for some readers, perhaps, somewhat too explicitly, described a number of medicinal solutions which may with advantage be applied to the treatment of nasal diseases by the method in question. I was desirous to impress upon the memory of the reader the fact that I recommend only such solutions as are brought up to a certain specific gravity by salts which do not decompose the medicinal agents. There may be cases in which it is desirable to swell the Schneiderian membrane by watery fluid and produce endosmosis, and others in which highly concentrated solutions may beneficially be used to effect exosmosis and shrivel Schneider's membrane. These adaptations, and the various accommodations of the fluids and their degrees of concentration, I must leave to the skill and ingenuity of those who make use of this method. They will, also, probably multiply the resources of the rhinotherapeutic pharmacy, and thereby add to the success and certainty of this interesting method of treatment.—*London Lancet.*

BACTERIDIA AND MALIGNANT PUSTULE.

To the Editor of The Lancet.—*Sir:*—The facts related in the following extract from a masterly article on Spontaneous Generation, by M. Jamin, in the *Revue des Deux Mondes*, are in all ways so interesting, that I make no apology for asking you to publish them. I ought to add that the italics, which occur in one or two places, are mine.

"Dr. Davaine has devoted himself for some years to the careful study of a terrible malady of the 'charbon' genus—The splenic apoplexy (*sang de rate*—anglicé, 'blood') which develops itself spontaneously in sheep, and is inevitably fatal to them. The blood of the diseased animals, examined under the microscope, has been found crowded with minute organisms allied to the *bucteria*, and which have been named *bacteridia.* This blood injected into the tissue of another animal carries these creatures with it, and death is certain. The malady is equally transmitted when a rabbit is made to swallow either the blood or part of an animal affected with splenic apoplexy. The infected blood may be dried and *kept for an indefinite time without losing the germs of the infusoria which it contains;* and whenever it comes to be injected or to be given as food, the disease is propagated. These facts being ascertained, as the symptoms of splenic apoplexy offer some affinity to those of

another malignant malady known by the name of 'charbon' (or 'malignant pustule'), inquiries were instituted as to whether there might not be a still closer bond between the two affections. 'Charbon' begins by a 'malignant pustule' of blackish color, surrounded by a ring of vesicles, which must be speedily destroyed by caustic, if a general infection is to be avoided. On the 14th of April, of the present year (1864), Dr. Raimbert was called to a carter, who had contracted a true malignant pustule on a farm where the sheep were suffering from splenic apoplexy. He removed the pustule, dried it at once, and handed it over to Dr. Davaine, who examined it under the microscope. It was a perfect *felt, composed entirely of bacteridia.* Rabbits fed with it contracted splenic apoplexy in consequence, and died with their blood crowded with *bacteridia*, and communicated 'charbon' to other animals. Here, then, is a disease transmitted from sheep to man, and appearing in him under the form of a pustule, which, in its turn, has the power of communicating to all animals the particular virus which it contains. And what is this virus? A brood of infusoria of a special and venomous species. *The smallest quantity suffices to kill, because it suffices to sow and multiply the species.* The malady is transmitted by inoculation, because the animalcules pass from the infected to the inoculated subject; it is transmitted by the air, because the germs dry up and are wafted away, and become again sown; possibly also, as many hold, by the bites of flies, which thus become the vehicle for the transmission of the *bacteridia.* Such is the explanation, not less simple than certain, of the effects of a particular virus. The future will decide how far it is possible to extend to all analagous cases so fertile a theory, but already it is easy to understand the hopes of physiologists and to predict their success; perhaps we are on the eve of knowing, avoiding, and curing contagious scourges."

The facts here detailed are not altogether new. Virchow, and some earlier observers, whose names escape me for the moment, had already pointed out the occurrence, in countless numbers, of a kind of "vibro" in the blood of *living* animals affected with charbon.

I have not been able to refer to Dr. Davaine's own account of these researches; but before the case which he wishes to make out for the minute organisms he describes can be considered as finally established, other data will be required beyond those adduced by his reviewer. Not only must the constant presence of this particular species of *bacteridia* in the diseases in question be ascertained, but its absence in other putrefactive

disorders. In all such cases there is a special danger, which those who have most studied the subject will best appreciate, of falling into the old error of taking for essential what may possibly be only an epi-phenomenon. The perfect way in which the facts seem to explain all the conditions, although a strong argument in favor of the interpretation set upon them, may, on the other hand, easily beguile us into a too ready acquiescence in it.

At the same time, the whole tendency of recent research, and of Pasteur's discoveries in particular, is to the effect that the tribe of minute organisms to which the *bacteridia* belong, in reality take the initiative in, and are the primary cause of, the zymotic changes with which they are found associated.

The uncontrollable *itching* which marks the first stage of malignant pustule, and is so characteristic of it, is, when considered as a phenomenon which betrays the presence of so many parasites in other parts, not undeserving of attention in connection with Dr. Davaine's view.

Should his discovery be confirmed by more extended researches, it is one of which it will be difficult to overrate the value.

As regards malignant pustule, its importance will be supreme. Diagnosis, pathology, origin, mode of propagation, and indications of cure will be all summed up in the conditions which attach to the growth and multiplication of a single parasitic organism.

In relation to diagnosis, the fact is one which might eventually become of the greatest possible use. For, if it be true that the first brood of *bacteridia* is developed in the part which is to be the seat of the future pustule, the practitioner, armed with the microscope, and with the little "harpoon," with which the Germans dip for trichina, might ascertain the characteristic presence of these minuter parasites by means of an operation not more formidable than the puncture of a grooved needle.

But, as M. Jamin rightly suggests, the interest of this discovery, should it be confirmed, culminates in its relation to the subject of contagion generally.

In a memorandum on the Investigation of Epidemic and Epizotic Disorders, which I drew up at the request of the British Medical Association, in March, 1863, there occurs the following passage:—

"In order to render the inquiry on which the Association is about to enter really comprehensive, it would be necessary to associate with the study of epidemics that of the diseases caused

in man and animals by living parasites, external and internal.

"A fuller knowledge of the phenomena attaching to the dissemination of the prolific and minute germs of these parasites could not fail to be of great use in helping to the true interpretation of the phenomena which attach to the strictly analagous dissemination of the equally prolific and equally minute germs of contagious poisons.

"In particular, it would be of the highest value in showing by data that could not be gainsaid, what is the real worth of the negative evidence now so implicitly relied on, as an indication of spontaneous origin, and as opposed to the law of propagation by continuous succession.

"Additional reasons for putting the parasites and the contagions together in such an inquiry, are:—1, that at many points the two blend, insensibly, one into the other; 2, that, with the advance of knowledge, diseases are constantly being transferred from the group of common contagions to the group of parasites; and, 3, that there already exists amongst the most advanced thinkers on these topics, a shrewd suspicion that the two groups will eventually coalesce, and be found in their essence identical."

Dr. Davaine's interesting discovery seems not unlikely to offer a striking illustration of more than one of the several positions here taken. I am, Sir, your obedient servant,

WILLIAM BUDD, M.D.

The Manor House, Clifton, Feb. 5th, 1865.

THE STARVATION OF PRISONERS.

If this last of modern wars, now so happily ended, has shown how great has been the advance towards perfection in the art of warfare by an enlightened and inventive people, it has none the less clearly demonstrated how stationary remains man's capabilities for evil in all time. Moved by disappointed ambition, hatred, and revenge, cultivated men of the nineteenth century have proved to be as thoroughly brutal and unchristian as the lowest savages in Africa. The murder of our gentle President was the last of a series of the most inhuman acts that human beings ever devised, but it was far from being the worst of them. In the midst of the judicial investigation which appears to show beyond question the complicity of authenticated and important rebel agents, if not of the chief himself, in this long-planned assassination, the details of a still fouler plot are

brought to us. Failing in their designs to burn the inhabitants of our prosperous cities in their beds, the rebel emissaries conceived the monstrous plan of calling the pestilence to their aid, and one of our own profession among them, if it can be believed, was found vile enough to go to its haunt and procure the means of spreading it among the crowded capitals of the North. The Bermuda authorities can scarcely be charged with any exaggeration or over-friendliness to us in their account of this matter, for the accomplice in this fiendish attempt was committed to jail in default of bail of only £50.

But far exceeding any of these crimes in malignancy and depravity, is the process of maiming or slow death by starvation and exposure, which has been systematically practised upon the thousands of our poor fellows in Southern prisons. Concerning the acts and the guilty agents in this instance, there can be no possible doubt; the rebel authorities, civil and military, are personally responsible for this most cruel and wholesale murder. The horrors of Belle Isle, and of the slaughter-pen at Andersonville, where many thousands of our soldiers were slowly starved to death, have been published to the world by the Sanitary Commission, but scarcely any notice has been taken of these barbarities abroad. Some of the latest English journals, in the very numbers in which they express the utmost horror of the last assassination, deny the truth of these statements altogether, and assert that an act of charity on the part of the rebel government, in setting free a few sick prisoners, that they might see their homes once more, has been basely perverted in this manner by the Northern press. Fortunately, we are able to support these statements, perfectly accurate in every particular, by other testimony of a character which English medical journals, at least, will not dare to question. In March, of the present year, 9000 returned prisoners were received within our lines at Wilmington, N. C., of whom 2500 were in such a state that they could not be moved farther North. Dr. J. C. Dalton, Professor of Physiology and Microscopic Anatomy, in the College of Physicians and Surgeons, New York, and author of the widely-known treatise on Human Physiology, and Dr. C. R. Agnew, of the Sanitary Commission, were selected to visit them and examine into their condition, for the purpose of determining whether they were suffering from disease, or in consequence of starvation and exposure. The latter gentleman in his report states:—

"I had several interviews with citizens of Wilmington who had seen our prisoners as they were brought into the city for

exchange, with a view of ascertaining what their impressions were, as to the motives which influenced the rebel officers in the management of squads in their respective commands. I found that some of the rebel officers in charge of our returned prisoners had permitted the citizens to furnish them food, while others had forbidden all access to the pens in which the men were quartered; and one, a rebel captain, having charge of about a thousand men, had gone with his drawn sword and knocked the food from the hands of the famished men, informing the citizens who had furnished it, 'that the best thing that could happen to the Yankees was to be starved, and thus expiate the crime which they had committed in invading Southern territory, and destroying the peace of Southern homes.'"

Dr. Dalton spent two days in visiting the hospitals containing the returned prisoners, and says:—

"But the greatest and most pitiful necessities were among our returned prisoners. No description can do justice to their miserable condition, because nothing but an actual inspection of them, in considerable numbers, can show that the wretched faces and figures that present themselves everywhere, are not the isolated and exceptional effects of severe illness, but the general result of a uniform and long-continued process of starvation and misery. There were degrees, of course, in which this condition was more or less marked. The better cases were walking about the streets, perhaps barefooted, or with no other clothing than a pair of white cotton drawers, and an old blanket or overcoat, both equally ragged. In these, the slow, dragging gait, listless manner, and cavernous, inexpressive look of the face, together with the general emaciation, formed a peculiar aspect by which they alone attracted the attention of the passer-by, and by which they were at once distinguished from the other convalescent soldiers. There was no occasion to inquire in Wilmington which were our returned prisoners; after half a day's experience, any one could distinguish them at a glance. Many of them, who had strength to crawl about in this manner, were prevented from doing so by the want of clothing. Major Randlete, the Provost Marshal of Wilmington, told me that on one day forty of these men came into our lines *absolutely as naked as they were born*. I inquired of a considerable number of them, whom I saw in the hospitals confined to their beds—naked, or with only a shirt, and covered with a hospital blanket—what had become of their clothing, and was told that they had thrown away what remained as soon as they could obtain shelter, because it was so ragged, filthy, and full of vermin. One of

them, on being told that the Sanitary Commission had sent them flannel shirts and drawers, caught at the word with a childish eagerness, and repeated the good news to his companions with a faint, half-imbecile smile, as long as I was within hearing. With the great majority of the feebler ones, personal cleanliness was a thing which they appeared to have forgotten. They no longer retained sufficient strength, either of mind or body, to appreciate or correct the degredation to which months of unavoidable uncleanliness had reduced them. In the most extreme cases, the condition of the mind, as well as the expression of the face, was absolutely *fatuous*, and the aspect of the patient was not that of a strong man reduced by illness, but that of an idiotic pauper, who had been such from his birth. Nevertheless, several of the surgeons informed me that the condition of the patients had visibly improved since their reception, and that I could not then form an adequate idea of what it was when they entered our lines. In that case it must have been lamentable beyond description.

"The testimony of both men and officers was uniform as to the causes of their unnatural condition. These causes were—1st, starvation; and 2d, exposure. Only such officers and men as could procure money were able to obtain anything like sufficient nourishment. Some of them told me that during the entire winter they had received absolutely no meat; a pint of cornmeal, often with the cob ground in, sometimes with and sometimes without salt, a handful of 'cow peas,' and sometimes sorghum molasses, constituted their usual ration. When in hospital, they had only very thin cornmeal gruel, and a little corn-bread. To the debility occasioned by this insufficient food, was added that resulting from exposure. It was a common thing for a prisoner, immediately on being taken, to be stripped of his clothing—shoes, socks, pantaloons, shirt, and drawers—and to be left with only an old and worn-out pair of drawers, and, perhaps, an equally worn-out shirt and blanket given him in exchange This robbery of clothing was also practised, more or less, upon officers. Even an assistant-surgeon who was captured within four miles of Richmond, told me he was robbed of his flannel shirt, while standing in front of the Libby Prison, and in presence of the rebel officer in charge of the squad. This was immediately after his arrival in the city, and when he had been for the three days succeeding his capture, entirely without food. With the scanty clothing thus left them, the men were kept during the winter, often without any shelter, excepting such as they could contrive to provide by

excavating a sort of rifle-pit in the ground, and covering it with old blankets or canvas, as their supply of fuel was insufficient, and sometimes entirely wanting; even in the hospitals, their suffering from cold was very great.

"One of the most melancholy sights in Wilmington, was that to be seen at the 'Geer' Hospitals. In these hospitals were collected all those patients who had lost their feet, either wholly or in part, by freezing, from their exposure during the past winter, and this in a well-wooded country. In some of them, two or three toes only, on one or both feet, were gangrened, and in process of separating by ulceration; in others, both feet had entirely separated, and the patients were awaiting the time when their general strength, and the condition of the stump, would warrant a final amputation. In many cases, the patients ascribed this gangrene directly to frostbites received on particular occasions; in others, to their illness from which they were suffering—generally fever combined with exposure. My own impression, derived from the result of many inquiries, was that it was generally due to a continuous depression of the vital energies from starvation and neglect, resulting gradually in a destruction of the life of those parts most exposed to the cold and the weather."

The accompanying extract from a letter written by Dr. Agnew, dated Wilmington, March 20th, 1865, paints in such terrible colors the appearance of these poor victims of rebel hate, that we have no word to add to their appeal to the civilized world for judgment on those who permitted and those who did such deeds.

"General Abbott, who received our poor fellows in the exchange, has just told me that language would utterly fail to describe their condition. Filth, rags, nakedness, starvation, were personified. Many of the men were in a state of mind resembling idiocy, unable to tell their names, and lost to all sense of modesty, unconscious of their nakedness and personal condition. Some of them moved about on their hands and knees, unable to stand upon their gangrenous feet, looking up like hungry dogs, beseeching the observer for a bite of bread or a sup of water. Some of them hitched along on their hands and buttocks, pushing gangrenous feet, literally reduced to bone and shreds, before them. Others leaned upon staves, and glared from sunken eyes through the parchment-like slits of their open eyelids into space, without having the power to fix an intelligent gaze upon passing objects. Others giggled, and smirked, and hobbled, like starved idiots; while some adamantine figures

walked erect, as though they meant to move the skeleton homewards so long as vitality enough remained to enable them to do so. To see the men who remain here in hospital, would move a heart as hard and cold as marble. Their condition is that of men who have for months suffered chronic starvation. Their arms and legs look like coarse reeds with bulbous joints. Their faces look as though a skilful taxidermist had drawn tanned skin over the bare skull, and then placed false eyes in the orbital cavities. They defy description. It would take a pen expert in the use of every term known to the anatomist and the physician, to begin to expose their fearful condition."—*Boston Medical and Surgical Journal.*

Editorial.

SANITARY COMMISSIONS AND FAIRS. THEIR MORAL AND MEDICAL RESULTS.

The great North-Western Fair for the benefit of the Sanitary Commission and of the Soldier's Home, is now in full and successful progress. As the iniquitous rebellion is now put down by the skill of our generals and the patriotic valor of our troops, helped not a little, we know, by the quiet services of the medical officers of the army, this is probably the last fair the Sanitary Commission will ever hold, until some future war shall demand new efforts: hence, it is a suitable time to review its work and judge of its usefulness.

The idea of the Commission is derived from the British society of the same character, which was established during the Crimean war. The primary object of such a body is, of course, to promote the health of the army by every possible means. When the Commission first commenced its labors, many judicious men felt grave doubts as to its usefulness. Officers of the army felt that a sort of insult was implied by the presence and labors of a body whose very existence presupposed some deficiency in the proper management and supply of the army, and especially of its medical department. Civilians asked the

question, whether it was wise to attempt to supplement any deficiencies of the government, and of the army officers, in the supplying and relieving of the men by means of an outside organization, which had no authority in the service, and might become loose and injudicious in its action. It was a serious question whether it would not be better to have every proper relief and supply furnished by the government through its own compact and efficient official machinery, and, if there was any deficiency in that respect, to lash the authorities up to their duty by public opinion and the press. It was feared, also, that if the Commission proved efficient, that the government might come, in some measure, to rely on it for those sanitary helps which ought to be furnished by official authority, and so the care of these important interests be insensibly transferred from the compact, well-organized, and responsible medical depart ment to a less complete outside body, which, from the nature of the case, might prove irregular and uncontrollable in its action. Such were the grave questions which passed through the minds of thinking men at the outset of the war.

After four years' experience, these fears have happily proved unfounded, and it is desirable that a clear and philosophic view of the character and tendency of the Sanitary operations should exist among medical men.

1st. There are serious objections to the government adding to the cumbrousness of army supplies and transportion, by providing a regular system of luxuries and sanitary conveniences, in such a way as to be always accessible. It adds to the *impedimenta*, and increases the force of clerks, teamsters, quartermasters, and other non-combatants, and opens the door to many abuses. Even the simple rule for a hospital fund, has to be suspended often in long or rapid marches. At such times the army must strip itself for the fight, and carry nothing, and provide for nothing but absolute necessities. It is well, therefore, to allow the people to make voluntary contributions to the comfort of the sick and wounded, whenever the position and movements of the forces permit. It is also true that there is a certain indirect benefit to the army, in various ways, from this

mode of communication with those in civil life: for, first of all, the fact that hospitals are seen and watched by the public, and liable to the praise and censure of those at home, and of the public press, is a powerful incentive to the medical officers to have everything accomplished in a creditable manner, and to cause their patients to feel comfortable and cheerful, by every possible means, in order that their reports may be of a complimentary character.

2d. The agents of the Sanitary Commission furnish an avenue through which the sympathies of the armies in the field and of the people at home mingle with and correct each other. If there ever shall be danger that the overpowering influence of a great military chief may be sufficient to lead the army on to the destruction of civil liberty, it will be well that the people have representatives fresh from their midst who will convey to the army the sentiments of those at home, and to those at home the feelings of the army, without the intervention of official dispatches. This communication being well kept up, the troops will be one in sentiment with the people, and no man can mount over them to despotic power, unless both people and soldiers agree in desiring it.

Lastly. Much valuable information is conveyed to the soldiers, officers, and surgeons, concerning their health. The documents published by the Commission at the beginning of the war, on gunshot wounds and other topics, were of great benefit to the medical officers. The final reports upon hospital and other medical matters, for which the facts are now being gathered, will also be of the utmost value in any future war. On the whole, therefore, we are agreeably impressed with the belief that the Sanitary Commission has been the instrument of great and permanent good.

Transactions of the State Medical Society.—Several of the papers read before the State Society have not yet been forwarded to the Publishing Committee, and the publication of the Transactions is delayed in consequence. It is hoped that these papers will be sent without delay, to Prof. N. S. Davis, Chicago, Ill.

The American Medical Association.—The meeting now in progress at Boston, is worthy of notice, as being the first since the war commenced which has had anything like a Southern delegation present. The war is now closed, and the objects for which it was carried on have been gloriously won. Now is the time, therefore, to turn our attention again to the culture and elevation of medical science. To this end it is essential to have a cordial feeling among the medical men of all sections. The vanquished are apt to feel sore over their defeat, and hence it is commonly easier for the victors to make the first overtures of friendship. We trust that no efforts will be spared to make medical men forget past divisions, and, looking only to the future, go on hand-in-hand to victories greater than those of war, and better for the welfare of the human race. The consolidation of the union of the States ensures the prospect that this nation will, at no remote period, tower among the most gigantic of the earth. It will be our fault if its scientific progress and the ameliorating effects of the healing art do not keep pace with its material grandeur. To this end, the success of the American Medical Association is an important means. It is at present the sole medium of general consultation and intercourse, and our representative before the world. It furnishes an opportunity for men from every part of the land to meet their fellows, compare their ideas, imbibe the grateful sense of unity and fellowship, and to return with enlarged views to distribute a like influence in their own sections. At the time of writing these thoughts, the place of the next meeting has not been determined, but it is not improbable that it may be in some of the Southern cities. If this should be the case, let us see to it that the representation is full and cordial, and that the objects of the organization be carried out with earnestness and power.

The present meeting was opened in the Representatives' Hall, in the State House, at Boston. The meeting was called to order by Dr. N. S. Davis, the President, and opened by prayer by the Chaplain.

Prof. Bigelow, the Chairman of the Committee of Arrangements, then gave an address of welcome to the delegates from all parts of the Union.

Prof. DAVIS then delivered his annual address. He commenced by congratulating the Association on the glorious victories which have restored our flag to its supremacy in every part of the land, and given us, at last, a return of our brave soldiers, decorated with wreaths of victory and enshrined in a nation's gratitude. He then passed to a notice of the distinguished dead of the year, alluded to the past history of the Association, followed by a discussion of the best methods of conducting its affairs and correcting certain errors in the management of its meetings. He then closed by an appeal to the members to carry forward the work of the organization to the full attainment of its beneficent objects.

CHICAGO ACADEMY OF SCIENCES.—This enterprising society has undergone, during the past year, a complete reorganization. In its new form, it has raised a fund of $70,000, and has established a large scientific museum, with the best of prospects. Mr. ROB'T. KENNICOTT, the Arctic explorer, has been appointed director of the museum, and has now gone, in the interest of the Academy, on a new zoological exploration to the unknown regions near Behring's Straits. Prof. STIMSON, the distinguished zoologist from Washington, is curator and secretary of the institution. A superb volume of transactions is now being published, by the liberality of citizens of Chicago, which will be very handsomely illustrated with colored plates of new species of fossils and animals found in the collection of the Academy.

SOLDIER'S HOME.—The Soldier's Home of this city is a place provided for the residence and treatment of discharged invalid soldiers. It is beautifully situated in the south part of the city, and directly on the lake-shore. It owns a spacious lot and two good buildings, which are occupied by wounded and sick men from the army. The students of Chicago Medical College witnessed there, during the last session, a number of very important surgical operations. The Home is to receive $25,000 of the proceeds of the great fair now in progress in this city. This money will greatly enlarge its capacity and usefulness.

The Committee on Ophthalmology, (Illinois State Medical Society), has called our attention to the fact, that his remarks upon pressure in conjunctivitis, and the use of muriate of ammonia in iritis, were not included in his report, but were made informally, full credit for their use being accorded to Surgeon J. S. Hildreth, of the U.S. Ophthalmic Hospital, in Chicago.

Personal.—Prof. H. A. Johnson, of Chicago Medical College, is now on a visit to Europe, for the combined object of the restoration of his health, and of observation on medical matters in Europe. At last accounts he was at Venice, with greatly improved health.

Prof. Chas. Pope, of St. Louis, is also on a visit to the same region, and was recently in Rome.

Compliment to an Army Surgeon.—That gallant soldier, Gen. Sherman, who has done so much for the reëstablishment of our union, and the crushing of rebellion, lately remarked in a conversation:—"On my long march from Atlanta to Savannah, not a single wounded or sick man was left behind. They were all brought through, and the few that died were carefully buried, each with a head-board properly marked, and the place recorded; and this I owe to the superior management of my medical director, Surgeon Moore, a man of the highest excellence and capacity.

Parisian Hospitals.—M. Maisoneuve, the distinguished French Surgeon, treats varicose veins exclusively by hypodermic injections of perchloride of iron. Many prominent Parisian surgeons have abandoned the practice, almost entirely, of closing wounds by first intention, believing that in this way there is greater danger of erysipelas and pyæmia, than in wounds left open and cauterized. Prof. Pope says that some of them have almost abandoned the knife, using various ingenious cauteries, ecraseurs, etc., from the same dread of pyæmia, believing that by the use of the knife one patient is inoculated with the secretions of another. All this may doubtless happen, but

would it not be better to learn to clean their knives better, and ventilate their hospitals more perfectly, instead of returning to the surgery of the dark ages? Erysipelas and pyæmia can be effectually prevented by only two modes, viz., sufficient ventilation, and avoidance of infection. In the light of modern science, the old hospitals of Paris, as well as of other cities, are radically deficient in the supply and distribution of pure air. The world will yet see an entire overthrow of our old system of hospital construction. The old buildings are mostly incapable of being rectified, and will have to be abandoned and better ones built. When this is done fully, and the patients are properly prepared before operations, and properly managed after them, erysipelas and pyæmia will almost cease to be dangers in surgery.

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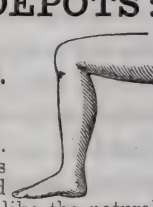

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DR. MOTT ON ARTIFICIAL LEGS.

NEW YORK, FEBRUARY 10, 1860.

When the Palmer leg was invented, I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

FIRST. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

SECOND. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

THIRD. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

FOURTH. The springs are made of India-rubber, and imitate more closely the action of the muscles.

FIFTH. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XXV.

CASE OF PUERPERAL PERITONITIS.

BY A. NILES, M.D., Quincy, Ill.

Presented to the Illinois State Medical Society, May, 1865.

June 22d, 1863, at 6 o'clock P.M., called to attend in labor, Mrs. Dorsey, a primipara, aged twenty-two years, an American by birth.

The labor was terminated by the forceps at 10 o'clock A.M., the next day, the child living, and apparently well. Erysipelas and puerperal peritonitis being rife at the time, the following prescription was ordered:—

℞. Tinct. Ferri Chloridi,---------- ℥xij
Quinæ Sulphatis,---------- ℥j
Syr. Simplicis,---------- ℥xx
Micæ et Sigma.

Take one teaspoonful three times a day, in one-fourth of a teacup of water.

June 25th. In the afternoon, a chill occurred, followed by fever and pain in the abdomen. At 6 o'clock P.M., I found the pulse 120; the respiration 40, and entirely thoracic; lochia suppressed, and the lacteal secretion diminished. Prescribed at once, one grain of sulphate of morphia, and directed one-half grain to be taken every hour during the night, and fomentations to be applied to the abdomen.

June 26th, 8 *o'clock A.M.* Found the pain gone; the pulse 100 per minute, and the respiration 12; the lochia returned. Slept some during the night. Continued one-half grain morphia every hour, and take six drops of a mixture containing equal parts syrup of squills and Norwood's tincture of veratrum viride, every three hours, increasing one drop at every repetition. 2 *o'clock P.M.* Symptoms not materially changed, but pulse 80. Continue the treatment. 9 *o'clock P.M.* Respiration 12; pulse 80; vomited several times. Continue the morphia, one-half grain every hour, and diminish the veratrum mixture to six drops every three hours.

June 27th, 8 *o'clock A.M.* Complains of pain in the abdomen, which is tender and tympanitic; pulse 100; respiration 20; the nurse omitted the medicine, because of the vomiting and movements of the bowels. Applied the fomentations, and resumed the morphia, one-half grain every hour, omitting the veratrum. 2 *o'clock P.M.* Pulse 100; pain relieved; respiration 15. 9 *o'clock P.M.* Continue the morphia, and resume the veratrum mixture, six drops every three hours, increasing one drop every successive dose.

June 28th, 8 *o'clock A.M.* The patient vomited several times, and had three operations of the bowels in the night. The nurse again suspended the medicine. Pulse 125 in a minute; respiration 25; abdomen tympanitic and tender. Directed the morphia to be given every hour, one-half grain, and not to be suspended without orders; omit the veratrum. 4 *o'clock P.M.* Dr. ROBBINS, in consultation, agreed to continue the morphia, and administer the following prescription:—

℞. Ext. Gelsemini semper fluidi,----------
Tinct. Aconiti,---------- āā℥ij
Tinct. Veratri Viridis,---------- ℥j
M. et S.

Take twenty drops every three hours. 9 *o'clock P.M.* Pulse 120; prescribed a powder, composed of pulv. opii gr. vj, quinæ sulphatis gr. ij, repeated every four hours, with twenty-five drops of the veratrum mixture, and two grains of opium in addition, every two hours in the interval, if necessary to relieve the pain.

June 29th, 8 *o'clock A.M.* Nausea and vomiting occurred during the night; tympanites, tenderness, and some pain in the bowels continues; three movements have occurred. Continue the opium, and omit the veratrum mixture. 2 *o'clock P.M.* The patient has but little pain; the nausea has subsided. Directed beef-tea for nourishment. 8 *o'clock P.M.* Pulse 100; respiration 18. Administer four grains of opium, and two grains of quinia every two hours, with ten drops of tincture of digitalis; one grain of opium to be given every hour in the interval, if necessary, to relieve the pain.

June 30th. Patient slept some during the night, and is feeling better, but complains of ringing in the ears, and fulness of the head; pulse 80; respiration 16; no pain or tenderness of the abdomen; bowels moved twice last night. Continue the medicine as before, and take the beef tea freely. 2 *o'clock P.M.* Symptoms not materially changed; is not narcotized; takes more nourishment. Continue the treatment.

July 1, 8 *o'clock A.M.* Appears better; pulse 80; respiration 16; slept some during the night; bowels moved three times. Continue the opium, quinine, and digitalis as before, with the beef-tea. 8 *o'clock P.M.* No pain; the abdomen tympanitic; pulse and respiration as before. Prescribed a powder composed of five grains of opium, and two grains of sulphate of quinine, to be repeated every two hours, with ten drops of tincture of digitalis.

July 2d, 8 *o'clock A.M.* Patient better; rested quite well; pulse and respiration as yesterday; lochia continues; lacteal secretion diminished, but not suppressed; bowels moved twice; abdomen tympanitic, but not tender. 2 *o'clock P.M.* Symptoms not materially changed; bowels move too much; add two grains of tannic acid to each of the powders. 8 *o'clock P.M.* Perspiring freely; complains of being weaker; pulse and respiration not changed. Continue the powders of opium, quinia, and tannic acid every two hours, and ten drops of tincture of digitalis every four hours.

July 3d. Patient complains of pain and tenderness in the right side; slept some during the night; bowels moved once;

perspiration continues; pulse 80; respiration 24. Prescribed a powder, to be repeated once in from two to four hours, composed of opium, quinine, and tannic acid, two grains of each, taking care to repeat often enough to relieve the pain, adding ten drops of tincture of digitalis every four hours, and continuing the beef-tea. 2 *o'clock P.M.* Pain and tenderness in the abdomen continues; pulse 100; respiration 24. Prescribed powders, composed of six grains of opium, with two grains of tannic acid and quinine, repeated every two hours, with ten drops of tincture of digitalis; beef-tea and whiskey continued as before.

July 4th, 8 *o'clock A.M.* Rested well during the night; respiration 16; pulse 80; some tenderness of the abdomen; no pain. Added to the powders of opium and quinine two grains of persulphate of iron, omitting the tannic acid; treatment, otherwise, as before. 8 *o'clock P.M.* Has no pain; pulse 60; respiration 12. Continue the treatment.

July 5th, 9 *o'clock A.M* Has rested well; no pain; is inclined to sleep; respiration 12; pulse 60; bowels moved once. Directed one powder to be taken every six hours, or oftener, if the pain returns, with ten drops of tincture of digitalis.

July 6th, 8 *o'clock A.M.* No pain or tenderness; bowels moved twice; perspiration continues; pulse 70; respiration 20. Continue the powders, with the tincture of digitalis, every six hours, and repeat oftener if the pain returns; continue the beef-tea and whiskey every hour. 8 *o'clock P.M.* Has some pain and tenderness in the abdomen; bowels moved twice; pulse 80; respiration 20. Repeat the powders every two hours until the pain is removed.

July 7th. Rested well after 2 o'clock; bowels moved twice; no pain or tenderness; lochia and lacteal secretion nearly stopped; pulse 80; respiration 20. Continue the powders every six hours, or oftener if the pain should return, with the beef-tea and whiskey.

No record was kept of the symptoms and treatment after this date, but the patient recovered slowly. The convalescence was retarded by a mammary abscess, and by a cough and expec-

toration, which disappeared after some weeks, under a supporting plan of treatment.

REMARKS.—My first experience with opium in the treatment of puerperal peritonitis, occurred twenty years since, while practicing in Western New York, during an epidemic of erysipelas and puerperal peritonites, which prevailed extensively in that region, at the time. The antiphlogistic treatment, although vigorously pursued, proved entirely unsuccessful, as every patient subjected to it died, as far as I knew. Believing this treatment worse than useless, I determined to try the effects of opium in conjunction with carbonate of soda, thinking that the opium would relieve the pain and render the patient's condition more comfortable; and that the soda might neutralize the poisonous cause which it was supposed might be lactic acid. This patient recovered; but at the time I regarded the soda as the most useful agent. Subsequent experience has taught me to regard opium as the great remedy, commencing with a moderate dose frequently repeated, carefully watching its effects upon the respiration, and increasing the dose until the pain and tenderness are removed. I believe that large doses are safe, provided they do not reduce the respiration too low. In the case reported, it was not at any time reduced lower than twelve in a minute; if necessary to relieve the pain it probably might be safely reduced below that point.

I would not presume to say that blood-letting, purging, and mercury, may not in some cases be useful in this disease, but I must admit that during a practice of thirty years, I have not seen a well-marked case of puerperal peritonitis recover under the antiphlogistic treatment.

Large doses of opium appear to be better borne when combined with quinia, which probably obviates the congestive effects of the opium, besides being useful by its sustaining power. Veratrum viridi, when it does not nauseate, has a beneficial effect in moderating the circulation, but ordinarily I prefer digitalis, as it is not so liable to nauseate, and probably acts as a tonic upon the heart.

ARTICLE XXVI.

ABNORMAL FŒTUS.

By F. R. PAYNE, M.D., Marshall, Illinois.

We recently met with a very remarkable case of an abnormal fœtus, a brief history of which we propose to present to the readers of your Journal.

These freaks of nature are not uncommon; but this case presents a very important fact for the consideration of those engaged in physiological investigations.

It is here demonstrated that a child can live and grow in utero almost to its normal size without a single trace of brain or spinal marrow.

On the 10th day of April, 1865, I was called in haste to see Mrs. D., the mother of four children. She was as supposed eight months advanced in pregnancy, and unnaturally abdominally enlarged. The liquor amnii was thrown off in large quantity, supposed to be at least two gallons, but no uterine pains were felt at the time of the rupture of the membrane. She was not alarmed, but sent for me, with the expectation of the rapid approach of labor. For the last eight weeks, she has suffered greatly; and could not sleep only in her chair or propped up in bed. She had, during this time, excruciating pain in her left side and hips; her feet were unusually edematous. After the discharge of liquor amnii, she could rest comfortably in bed in the recumbent posture; and the pain of her side and hips was relieved.

On the 12th day of April, she felt slight uterine pains, and before assistance reached her a monstrosity was born; also a natural and healthy placenta. She had felt the motion of the child up to the day before it was born. After the birth of the child, the womb seemed preternaturally large, and we suspected that it contained another fœtus; but after thorough examination, the uterus was found freed of its contents, but the walls were unnaturally thick.

The child was dead, but no evidence of decomposition. There was considerable ulceration over the cervical portion of the spine. By careful dissection, we found that the bones of the cranium were almost entirely absent, only a small portion of the inferior margins of the occipital, parietal, and frontal bones could be found, and all of the spinous and transverse processes of the vertebra were absent, consequently there was no spinal canal. The back part of the face was covered with a tough membrane, over which their was an imperfect covering of hair. The bones of the face were nearly natural, also those of the extremities. The evidence is almost positive that the child had not been dead but a few hours.

This family are scrofulous; all of the children have sore eyes and ulcers over the body, but not syphilitic. The muscles of the body, except over the upper portion of the spine and head were normal, and sufficiently well developed. The great point of interest in this case, is how did the child live without a nervous centre?

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

SIXTEENTH ANNUAL CONVENTION.

PROCEEDINGS OF TUESDAY, THE FIRST DAY.

The American Medical Association began its Sixteenth Annual Convention at the State House, Boston, in the Hall of the House of Representatives, on Tuesday, the 6th inst. A large number of delegates and members were present, occupying the entire floor of the Hall, while the galleries were occupied by spectators. The officers of the Convention were as follows:—

President.—N. S. Davis, M.D., of Illinois.

Vice-Presidents.—Wm. H. Mussey, M.D., of Ohio; Worthington Hooker, M.D., of Conn.; William Whelan, M.D., of District of Columbia; J. E. B. Heintze, M.D., of Maryland.

Secretary.—William B. Atkinson, M.D., of Philadelphia.
Assist.-Secretary.—Horatia R. Storer, M.D., of Boston.
Treasurer.—Casper Wistar, M.D., of Philadelphia.

Considerable time was occupied in the registration of the names of delegates, under the direction of Dr. J. N. Borland, of the Committee of Arrangements. At about half-past 10 o'clock, the Convention was called to order, and prayer was offered by Rev. Dr. Lothrop, after which Dr. Henry J. Bigelow, of Boston, delivered the address of welcome.

DR. BIGELOW'S ADDRESS.

By direction and under the authority of the Committee of Arrangements, I bid you cordial welcome to the metropolis of New England. Sixteen years ago, these halls were honored by your distinguished presence; and since that time, although a bloody war has devastated the land, twice have you met together, under the sheltering protection of cities far distant from each other, to lay an offering upon the altar of science. We are now once again assembled, to unite in a single common sentiment of congratulation at the advent of peace, for which we have so long watched, and in whose genial sunshine the flowers of science may again expand.

The American Medical Association was at no remote period one of the prosperous institutions of the country. From a small and perhaps doubtful beginning, it had risen by a continuous and steady growth to become one of the successful enterprises of the age. The great cities of the North hailed its advent with acclamation, while further South, the hospitable homes of Richmond and Charleston, of Nashville and St. Louis, were thrown open for its warm and generous reception.

Such was our enviable position four years ago, when the demon of insurrectionary strife exhaled its poisonous and blasting breath over the fairest and most fertile portion of our common country. Cut off from intercourse with their Northern brethren, deprived of the opportunity of attaining light and truth, borne down by relentless exactions and unmerciful conscription, by devastating war and its inevitable sequels of pov-

erty and bereavement, our Southern States have been to us for four years an alien and a hostile land.

During this long and weary period, the steadfast edifice of the Republic has breasted the battle and the storm; an insidious and fatal bolt at last descending to rive its highest pinnacle. We recover from the shock to thank God, that as the tumult ceases, and the smoke clears away, the grand old edifice still lifts its head among the nations, unshaken in its foundations, untarnished in its glory, an impregnable tower of strength, and the hallowed shrine of patriotism. The Southern States have at last succumbed before the persevering valor and terrible unanimity of the North, and the jarring elements have at last found repose, after the convulsions of a great transition period, not in the replacement of the old strata, but by the gravitation of the social system into the final and inevitable equilibrium of human rights.

While the whole country is occupied with the great and difficult problem of reconstructing the Union, that we may come out of this ordeal a wiser, a more stable, and a more prosperous people, it is for us to consider whether we cannot do something to render our own Association a more efficient and a more productive institution. No one can doubt that the medical science of this country, now ostensibly represented in this body, is destined one day to occupy a very high place in the medical history of the world. The American mind, the practical ability of which no one has ever doubted, is devoting itself more and more to the study, by exact experimental observation, of abstract truth, each year augmenting the number of medical philosophers devoted to scientific research at the sacrifice of professional and personal interest. It requires no prophet to foretell that they will identify this Association with illustrious labors whose magnitude and importance will henceforth keep pace with the invigorated growth of the Republic.

And who shall set bound or limit to the vast future of this country? If we believe with the great philosopher that, "in the youth of a State arms do flourish; in the middle age of a State, learning." Who that has witnessed the Titanic conflict

between opposing hosts, such as the history of the world has rarely seen confronted, who that contemplates the magnitude of this broad continent, its millions of acres of waving grain, the treasures buried in its bosom, the iron, the gold and silver, and coal and oil more precious than these; the great liquid highways that bind together the North and South and East and West in one indissoluble bond of natural union; the energy of its people, the enormous territory now first thrown open to the intelligent efforts of free labor, who can fail to discern in these combining elements of prosperity the stalwart youth of a colossal nation? Let your imagination for a moment contemplate the vision of its maturity and manhood; when the great Western Valley shall become a central home of letters and the arts, when the culminating light of science shall there shed its full effulgence, and the youthful giant of the Western hemisphere in his ripened strength and intellect shall challenge the place left vacant for him on our planet.

While the great Republic is accomplishing its political destiny, let us fail not to carry forward our corresponding mission of relieving human suffering, averting human disaster, and retarding human decay; not by deceptive assumptions, not by fallacious assurances, not by the dogmas which professional pride has set up, but by an earnest, impartial, and discriminating pursuit of truth, and by an unwearied effort to divorce popular error from the companionship of legitimate science. It is our duty to lay here in solid labor the foundations of an association which for a century to come shall gather to a focus and radiate the light emanating from the best minds in our profession.

We rejoice to offer an earnest expression of our gratitude to those of our medical brethren, some of whom we are proud to see among us, who have stood so nobly at their posts by sea and land, amid the carnage and the pestilence; and who, surrounded by the distractions of the camp and of the fight, have borne a conspicuous part, both by their active services and their literary labors, in upholding the honor and dignity of their profession.

Not less happy are we to see among us our brethren of those neighboring provinces, from which we have received such kindly tokens in our recent hour of national affliction. The people of this continent have so many common interests and common sympathies, that no political landmarks can render them alien to each other.

I welcome you, gentlemen, in behalf of the Committee I have the honor to represent; of the old Massachusetts Medical Society, who cherishes a matronly regard towards her younger sisters of other States; in behalf of the City of Boston, which extends to you her civic hospitality. Welcome, friends and brothers! assembled from distant regions of our common land—from the great commercial emporium through whose aortic thoroughfare pours the ceaseless tide of nations, or from the city whose traditional brotherly love echoes so freshly from the lips of all our wounded soldiers; you, brothers of New England, born to the common heritage of toil and freedom; you, whose home is by the great Western watercourses, whose blood sprang from the same fountain as our own, and has so often mingled with it again upon the battle field; and you, few we may fear, but thrice welcome, loyal and faithful brothers of the South, who have passed through the long night of trial that you might hail to-day the glorious dawn of liberty. Welcome, fellow-citizens of the redeemed Republic, whose wounds you have bound up in binding up those of her defenders. Welcome, all who honor us by their presence on this auspicious morning, which beholds the sacred emblem of liberty restored to its rightful places, tattered with bullets, stained with blood, fringed with the sable sign of mourning, but spread over every stronghold from which treason had struck it down, and soon to rekindle all its ancient glories.

At the close of Dr. Bigelow's address, the roll of registered members was read by the Secretary.

It was voted that names of persons desiring election as pernent members, on presenting the proper credentials, be handed to the Committee of Arrangements, to be hereafter reported upon.

Communications from absent members were received.

The President then proceeded to deliver the annual address, as follows, which was received with marked approbation, and at its close the thanks of the Association were voted to Dr. Davis, and a copy of it was requested for publication:—

DR. DAVIS' ADDRESS.

GENTLEMEN OF THE AMERICAN MEDICAL ASSOCIATION:—In entering upon the discharge of those duties imposed on me by your too generous partiality, one short year since, I was constrained to do it with expressions of deep regret, that the great struggle for subduing a gigantic rebellion was still continuing; and that in consequence, the seats of many of our professional brethren, whose cordial hands and warm hearts had so often greeted us, were still vacant. Those expressions of regret were accompanied by the hope, that before the day for this annual gathering should come, the dark and desolating cloud of war would be broken, and give place to the radiant bow of peace, with former friendships restored and our national union unbroken. It is my highest pleasure to congratulate you, to-day, that what we then so fondly hoped for, is now substantially accomplished. The cherished flag of our country again waves in triumph over every part of our almost boundless domain; and the patriotic legions who have borne it, proudly, on so many bloody fields of human strife, are returning to their peaceful firesides, decorated with wreaths of victory, and enshrined in a nation's gratitude.

But our congratulations, to-day, are still mingled with a deep shade of sadness. Sadness, that so many of our countrymen have been compelled to sacrifice their lives in defence of the integrity and perpetuity of our government; sadness, that so many of our professional brethren have been constrained to abandon the peaceful pursuit of their humane calling at home, and sacrifice comfort, health, and sometimes life, in the noble effort to mitigate the calamities and sufferings of war; and a deeper, more enduring sadness, that to the desperate wickedness of treason, has been added the darkest crime that can disgrace

human nature, the deliberate murder of the Chief Magistrate of this great Republic. Let us hope, however, that in this act, the climax of human wickedness has been reached; that the cup of our national calamities has been drunk to its bitterest dregs; and, with becoming humility, in the true spirit of our humane calling, let us implore the Sovereign Ruler of the Universe to make our reunion one of hearts as well as States; and our great nation, one in which labor shall everywhere receive its just reward, whether in the workshops and humble cottages of the North or on the sunny plantations of the South.

By a natural transition, the mind turns from these reflections to the work of Death in our own ranks, since our last annual interchange of greetings. A few months since, one who has filled the highest position in the gift of this Association, with unrivalled ability, and whose professional skill, ripe scholarship, and noble christian deportment, had endeared him to us all, was called upon to cease his earthly toil, and enter upon a higher and a holier existence. And at the very hour when our profession was bowed in full sympathy with the national grief for the loss of its Chief Magistrate, our cup of affliction was made to overflow afresh, by the final departure of one, who, by universal consent, had occupied, for many years, the highest position, especially in the surgical department of our profession, not only in America, but throughout the civilized world. Need I mention the names of Jonathan Knight, of New Haven, and Valentine Mott, of New York? After long lives, ardently and successfully devoted to the dearest interests of humanity, full of years and full of honors, peacefully they have gone to their eternal rest. But their names, their works, and their noble examples are left to us and the generations that will follow. Nor has the work of the destroyer been limited to these; for within a few months past Thomas D. Mitchell, of Philadelphia, Wm. E. Coale, of Boston, and Sylvester D. Willard, of Albany, all members of this Association, and eminent in the profession, have been released from their earthly labors.

With this slight and imperfect tribute to the memory of those whom we shall see no more in our midst, permit me to occupy

your attention with some reflections upon the past history, present organization, and future prospects of this great National Medical Association. In submitting these reflections, I shall assume neither the character of an eulogist nor a critic, but shall simply endeavor to draw such lessons from the actual results of the past as will aid in the discharge of the duties of the present, that still greater benefits may be reaped in the future.

Twenty years have now elapsed since the Medical Society of the State of New York issued the call for the National Convention, from which our present Association had its direct origin. During that period of time, large, pleasant, and harmonious meetings have been held in almost every section of our widely extended country, and both time and opportunity have been afforded for developing the actual interests and influences involved in our organization. It requires only a brief examination of our past career, to show that both in the principles of our organization, and in the practical results of our annual meetings, three important interests are directly involved; viz.: the improvement of our system of medical education, the direct advance of medical science and practice, and the promotion of social intercourse and fraternal feeling throughout the entire profession. And the thoughtful attendant upon our meetings has not failed to observe, that each of these interests has uniformly attracted a due share of representatives. Indeed, most of the embarrassments attendant upon our past meetings, and the criticisms to which the Association has been subjected have arisen from the difficulty of accommodating interests so important and varied, in such a manner as to satisfy the advocates of each, in the very brief time hitherto allotted to our annual meetings. Thus, whenever medical education became the theme of discussion, those more interested in the reading and discussion of papers and reports of a direct scientific and practical character, were ever ready to restrict debate, refer the subject to committees, or in some other way avoid what they regarded as a mere waste of time. On the other hand, if the reading of an elaborate scientific paper was commenced, the author would seldom complete the first half dozen pages before the zealous ad-

vocate of educational reform would dispose of the whole subject by a motion to dispense with further reading and refer the document directly to the Committee on Publication. While the good-natured lovers of good dinners and sight-seeing would always be ready to aid the other parties with their votes, and to secure the acceptance of every invitation to an intertainment, an excursion, or a public institution.

Under such circumstances, our records soon became cumbered with a multitude of reports and resolutions concerning medical education, and the annual volume of Transactions plethoric with reports and papers that were read to the Association by their titles only; while the social entertainments reached a magnificence and costliness seldom equalled in any other relation of society.

The embarrassments felt from these circumstances led to frequent propositions to change either the constitution of the Association or its rules of business.

To avoid lengthy reports on general topics, all the standing committees on the different departments of medical science were first abolished, and a list of committees on special subjects substituted in their place.

To further economize time, an order was next adopted requiring every report and paper covering more than ten pages of manuscript, to be presented by a brief abstract, merely setting forth its title and contents.

To check the evils of extravagant and costly entertainments, the Committee of Arrangement were instructed to omit all such from the programme of arrangements for all subsequent annual meetings.

The practical results of these changes were by no means satisfactory. The first led to the annual appointment of a long list of committees on special subjects, not one in six of whom ever furnished a report of any kind. The second speedily developed the practice of presenting reports and papers by their titles only, and often accompanied by the acknowledgment that they were still unfinished, followed by a vote that they be referred directly to the Committee of Publication. Thus, in many in-

stances, not only deciding to publish papers of which the Association was profoundly ignorant, but which, at the time, had no actual existence, except in the minds and memoranda of the authors. The adoption of the third, judiciously designed to check extravagance in social entertainments, has resulted only in exchanging one magnificent public banquet, occupying one evening, for three or four private ones every evening during the annual sessions of the Association. If we add to these considerations the fact that the greater part of the first day of each annual session, embracing one-fourth part of the whole time, has been occupied with preliminary matters of organization, and the election of officers who were immediately required to enter upon the performance of duties for which they were often wholly unprepared, we shall readily perceive the reasons why the practical working of the Association, thus far, has not fully realized the wishes and expectations of many who have labored efficiently for its organization and support.

Some, who entered upon the work with the hope that the Association would be the agency for speedily securing the adoption of a uniform and elevated standard of medical education by all the medical schools of our country, and having in their own minds some favorite plan by which it was to be accomplished, having seen year after year pass by without its adoption, very naturally conclude, from their standpoint of observation, that the Association is a failure.

Others, who entered with equal zeal upon the work of organization, with the hope that it would be the means of establishing in the profession of our country a spirit of original scientific investigation, a more complete elucidation of the causes and laws governing the prevalence of zymotic and epidemic diseases, and a higher standard of medical literature, have found, in our short annual sessions and the little attention actually given to scientific and original papers, comparatively little to sustain their zeal, or to deter them from writing over our portals the word *failure.*

Therefore, it is not strange that we should meet here and there an unfriendly criticism, or the uncomplimentary remark that our

annual meetings partake more of the character of "gormandizing and sight-seeing," than of grave, scientific, and professional inquiry; or in casting our eyes over the assemblages of the last three or four years, we should miss the presence of some who contributed so much to the interest and value of all our earlier meetings. But with a frank admission of the defects and embarrassments in the past practical working of this Association, does the conclusion legitimately follow that it has made so little progress in the accomplishment of the important purposes for which it was organized, as to demonstrate its inutility, or to create a well-founded doubt of its ultimate entire success?

To answer this question without prejudice, it is necessary to keep in mind the distinction between the accomplishment of a given purpose and the particular modes or plans by which it is to be attained. Many of the latter may be tried and fail, and the object sought may nevertheless be fully accomplished. It is probable that three-fourths of those who originally looked confidently to this Association as the instrument for elevating the standard of medical education in this country, entertained the idea that it would be effected by some uniform plan embracing better preliminary education, longer lecture terms, more extensive clinical instruction, and more rigid examinations, to be formally adopted by the schools. And, inasmuch as no such plan has yet been adopted, it is quite natural that those who had been regarding this as the only method for gaining their purpose, should regard the purpose itself as a failure. And yet such an inference would neither be a logical deduction from the premises, nor in accordance with the actual facts as they exist at the present time.

This will be fully apparent to any one who will compare the number, location, and requirements of the medical schools of 1845, with those of 1865. At the former period, from 13 to 16 weeks was almost universally adopted as the length of the annual lecture term. Now, the number of colleges in which the lecture term is less than 18 weeks, are few and unimportant, while some have extended it to five, and others to six months. Then, the number of Chairs, or Professorships, was five and six, leaving the

important branches of Organic Chemistry, Microscopic Anatomy, and General Pathology entirely out, and usually making Physiology only an appendage to the chair of Anatomy. Now, the medical college that does not include all these in its curriculum, would be universally considered as behind the age. At the former period, three-fourths of all the medical schools in this country were so located that their students could have no access whatever to any true clinical instruction at the bedside of the sick. And in those located at Boston, New York, Philadelphia, Cincinnati, and New Orleans, where adequate hospitals existed, the actual clinical instruction was generally limited to one or two visits to the hospitals each week. Now, this is so far reversed, that two-thirds of the whole number of our medical colleges provide some amount of true hospital clinical instruction, and three of them, at least, are so directly connected with important public hospitals, that their courses of clinical instruction, in all the departments of practical medicine and surgery, are as full and as extensive as any of the other departments of medical science.

The extent and importance of the change in regard to clinical instruction will be rendered still more apparent by another mode of comparison. For instance, at the time of the organization of this Association, not only three-fourths of our medical schools were so located as to afford their students no access to hospitals, but a large majority of the whole number of students resorted to them for instruction. Thus, in the New England States there were, at least, six medical schools, of which only the one in Boston was located within reach of an adequate hospital; and yet its classes were often outnumbered by those at Pittsfield. While at the present time, if I remember correctly, the number of students receiving instruction in Boston, with access to the Massachusetts General Hospital, is nearly, if not quite, equal to that in all the other New England schools put together. The time is fresh in my memory, when the number of students annually assembled in a medical college, located on the bleak hills of Herkimer County, in the State of New York, fully equalled those resorting to the schools directly in the great

metropolis of that State. Now, I think there is not a medical college maintaining an active existence in that State, which does not provide for its students access to a public hospital for clinical instruction.

What is true of New England and New York, in this respect, is equally true of the whole country.

When we remember, that of all the improvements in medical education, demanded by this Association from its primary organization to the present time, none were more prominent, clearly defined, or persistently urged, than an increase in the number of Professorships, with an extension of the curriculum; a lengthening of the annual lecture term; and the addition of full hospital clinical instruction, both in practical medicine and surgery; we see how closely the improvements actually made correspond with the demands of the Association, and how nearly the objects sought have been already accomplished. It is true that they have not been accomplished by the formal adoption of any particular plan or concert of action, and perhaps not wholly through the influence of this Association; but that their accomplishment has resulted mainly from the strong concentration and persistent expression of public sentiment through this Association, there can be no reasonable doubt.

Neither has the influence of our organization upon the progress of medical science and literature been as feeble as many suppose. At the commencement of our associate existence, the number of original American medical works was comparatively small; and the universal complaint was, not only that American talent was spent only in the editing of foreign books, but that our own writers, even of the highest reputation, found it extremely difficult to find publishing houses willing to issue their works from the press. The able reports on this subject, and on medical literature, made to the earlier meetings of this Association, and the consequent general awakening of attention to it, throughout the whole profession, has resulted in so completely reversing the former state, that we now rarely see the name of an American writer appended, merely as editor, to a foreign work; while the medical press of our country literally teems

with original medical works of high merit, in every department of medical science. And not only so, but the shelves of the laborious practitioners of our humane art, throughout the whole country, now contain three American to one foreign work, especially in the departments of practical medicine, surgery, and obstetrics. And whoever examines the series of published Transactions of this Association, will not only find a number of essays, which for scientific merit would do credit to the investigators of any other country, but they will find much additional evidence that attention has been directed to most important inquiries concerning the causes and prevalence of epidemic diseases; the influence of topography and climate on endemics; and the nature and therapeutic value of indigenous articles of the materia medica, not only among our own members, but also throughout many of the State, County, and District medical societies in every part of the country.

Socially, the success of our organization has been all that the most ardent could desire. It has not only removed local prejudices and sectional jealousies, but it has awakened everywhere the most liberal hospitality and the most cordial friendships. It has, indeed, made neighbors and friends of families whose homes are a thousand miles apart; while it has infused new life into many old State and local societies, and stimulated the profession to the formation of many new ones.

From a deliberate and candid examination of the whole past history of the Association, with a full appreciation of the embarrassments arising from short annual sessions, and imperfect arrangements for the transaction of business, I am fully satisfied that so far from having proved a failure, it has made such substantial progress in the accomplishment of every important object of its creation, as to afford the fullest assurance of its final complete success. Hence, instead of entertaining doubts, or yielding to feelings of hesitation or discouragement, every friend of the social organization of the profession, and every advocate of advancement in its educational, scientific, and literary interests, should give it his most cordial support. Instead of abandoning the work of twenty years past, merely because

it is not yet perfect, true wisdom would dictate the careful removal of such hindrances and imperfections as time and experience had developed, that the great and important work itself might be pushed more rapidly to completion.

Having carefully and anxiously watched the progress of this Association, from the incipient steps of its organization to the present time, I trust those assembled on this occasion will pardon me if I devote the remainder of this address to a brief and explicit statement of those measures, which seem to me sufficient, if judiciously executed, to ensure its complete success and perpetuity.

Although it is apparent that most of the evils and embarassments which have attended our past meetings have arisen from an attempt to crowd a consideration of the educational, scientific, and social interests of the profession into the short space of three or four days, yet it is by no means desirable to abandon either of these interests in the future. The exact and all-important desideratum needed at this stage of our progres, is such an apportionment of time to each of these interests as their relative importance demands; and the time allotted to each so systematically used as to develope the highest degree of efficiency in the results. To have a time and place for each legitimate interest, and to keep each in its place, is a matter of paramount importance in an organization as extensive as ours. Happily, the arrangement for attending to the scientific interests of the Association in sections, first carried into effect in 1860, and the amendments to the constitution adopted in 1864, have removed all impediments to the adoption of a most complete and efficient plan of operations at each annual meeting. Let the morning sessions of moderate length be devoted to the general business of the Association, and the consideration of all matters relating to medical education, together with the simple presentation of all scientific reports and papers by their titles, that each may be referred to the section most appropriate for its consideration. Let all the afternoons and evenings, except one evening of each session, be set apart exclusively for the consideration of the scientific interests of the Association in the

capacity of sections. This would leave only one evening of each session to be devoted, in a formal manner, to purely social interests. To some, this limited time may seem insufficient. But, if we remember that all such as are more interested in sight-seeing and mere social intercourse than in the advancement of science and literature, can gratify their preferences at any part of the meeting, without interrupting either the general sessions or the sections, it will be conceded that the time specified is quite as much as the *relative* importance of the interest to be served requires.

But the arrangements for that evening should be such as would permit the most free and cordial intercourse. A public hall should be provided, in which gentlemen and ladies could mingle and promenade freely; where each could seek out his old friends, and make the acquaintance of new ones; where wit, rapartee, and, if need be, songs, sentiments, and speeches could be made to enliven the evening. A simple stand might be placed in some corner, where all who wished could obtain a dish of ice-cream, strawberries or other fruit, and a cup of coffee. But there should be neither ostentatious show, nor rich viands, nor strong drinks, for the acknowledged guardians of the public health should not, especially in their highest representative capacity, themselves publicly violate the plainest laws of hygiene.

That part of our proceedings which has been the subject of most serious complaint, during the last few years, has related to the consideration and final disposition of such reports and papers as related to the scientific and practical interests of the profession. And it may appear to many that the time which has been indicated as proper to devote to those topics is still wholly inadequate for their proper examination and disposition.

If, however, all such papers and reports are called for and referred to the appropriate sections, before the close of the first morning session, as they certainly should be, it is confidently believed that adequate attention could be secured for every subject properly presented for consideration. If the order of business is so arranged as to accomplish this, the sev-

eral sections can commence their work on the afternoon of the first day of each annual meeting, thereby securing from three to four full afternoons and evenings for their important work; and if all the sections are properly organized, and the subjects for consideration judiciously distributed among them, it will be equivalent in practice to a multiplication of these three or four afternoons and evenings by six; or a practical extension of the time devoted to the scientific interest of the Association to three or four weeks.

And, in this connection, I wish to call your serious attention to the more complete and efficient organization of these subdivisions of the Association. As each section is authorized to choose its own officers, and adopt its own rules of action, their existence should, by no means, be regarded as ended at the adjournment of each annual session. But a President and thoroughly qualified Secretary should be chosen for the entire year; and each should adopt a system of well-considered rules which should govern the reading, discussion, and final disposition of all reports, papers, and questions that legitimately come before it. Among the rules thus adopted, should be one requiring every report and paper to be so far complete at the time of its presentation, that if deemed worthy of publication it can be passed from the custody of the section directly to the Permanent-Secretary, without being detained by the author for either revision or completion. Another should peremptorily forbid the reference of any report or paper on a scientific or practical subject, to the Committee of Publication, until the same has been sufficiently examined by the section, to know its length, its actual contents, and the number and character of the illustrations, if any, that are to accompany it. If there should happen to be more papers referred to any one section than could be fairly examined during the time the Association is in session, such surplus papers should be referred to judiciously selected sub-committees, with instructions to complete their examination and report on the same to the Permanent-Secretary within thirty days after the adjournment.

The adoption of such rules, and the rigid adherence of each

section to them, would accomplish two very important objects. First, it would more effectually guard against burdening the Association with the publication of matters appropriate only for the pages of an ordinary medical periodical, and would secure the Committee of Publication against unnecessary delays in the reception of such matter as should be actually designed for publication in the Transactions of each year. Second, by rendering it certain that every report or paper properly prepared and presented in time, would receive a fair hearing and consideration, a very much larger number of writers and investigators of ability would be induced annually to present the products of their labor for the consideration of the Association.

Permit me to make one more suggestion in relation to the sections, namely, that each section should be provided with either a skilful secretary, or a professional reporter, who, in addition to the simple record of proceedings, should preserve a correct summary of all discussions on scientific questions and papers, and report the same to the Permanent-Secretary, that so much of it as was of importance could be published in connection with the papers to which it might relate, in the Transactions of the Association. This would not only preserve many valuable facts and observations in a small compass, but it would present a strong additional inducement for the most active and experienced minds in the profession to attend and participate in the doings of the sections.

I hope the foregoing suggestions will be regarded as worthy of a prompt and careful consideration by the several sections at our present session.

I would also suggest to the Association the propriety of dispensing with the appointment of a long list of special committees annually, which seems to have served little other purpose than to advertise the names of those receiving the appointment; and instead thereof, allow each section annually to select such subjects for investigation, and appoint such committees to investigate them, as they may deem most profitable. This need not interfere in the least with the reception of voluntary communications on any subject, in the same manner as at pre-

sent; and yet I am confident it would insure the selection of more important topics; cause them to be more equally distributed among all the important branches of medical science, and secure their more prompt and thorough investigation.

It should be a leading object of the scientific department of our Association, to awaken and foster in the profession an active spirit of experimental research, and of rigid deductive investigation. It should also exert an important influence in directing such researches into the most profitable channels, by more carefully selecting the most appropriate topics for investigation from year to year.

If each section now provided for by our by-laws would perfect its organization and designate two or three important topics for investigation the coming year, it is certain that it would give to the scientific interests of this Association a scope and efficiency far superior to the present or any previous methods of procedure. It has also appeared to me that such a change might be made in the mode of disposing of the papers presented to this Association, as would liberally encourage contributions, and yet greatly increase the scientific character of our annual volume of Transactions. According to my views, the volume of Transactions published to the world, by such an Association as this, should contain no papers except such as embody a complete deductive review of the topics discussed, developing and establishing important rules of practice; or the results of such well-devised series of experiments or observations as clearly indicate a positive addition to our stock of knowledge concerning some one of the departments of medical science. Such papers and reports as might be presented and referred to the several sections, which though neither complete as deductive essays, nor clearly establishing new facts, yet containing fragmentary items or cases of value, or suggestions worthy of further investigation, should be recommended for publication in such regular medical periodicals as their authors might choose; while such only as were found worthless, should be returned to their authors.

It might be feared by some, that the adoption of such a rule of

proceeding would make our annual volume of Transactions very small. Be it so. It certainly is not the *bulk* of the volume, but the *quality* of the matter it contains, which is to affect both our reputation and our usefulness. Perhaps one of the most important topics connected with medical science, which still needs elucidation, is the connection of atmospheric conditions with the prevalence of certain forms of disease. But to properly investigate that subject, it is absolutely necessary to have a perfectly reliable register of the Thermometric, Barometric, Hygrometric, Electric, and Ozonic conditions of the atmosphere, kept in each important geographical section of our country, through a series of at least ten consecutive years, in direct connection with a corresponding record of the prevalence of the various forms of disease in the same localities. And I suggest whether, if the rule just mentioned in regard to the publication of papers in the Transactions, should so far diminish the size of the annual volume as to leave a surplus in the Treasury, it would not be more profitably spent in furnishing the necessary instruments, and establishing the necessary records, to determine with accuracy, in a few years, the actual relations of appreciable atmospheric conditions to the prevalence and character of diseases, than in the publication of such papers as serve little other purpose than to increase the size of the volume of Transactions. Indeed, if capable and zealous members of the profession, furnished with the necessary instruments, could be employed in each section of the country, and the results of their observations carefully arranged, tabulated, and reported to this Association annually, where, in the section on Meteorology and Epidemics, these results could be closely scanned, and have added to them the more desultory observations of the profession generally, it could not fail to throw a flood of light upon the etiology of a large class of most important diseases.

With becoming deference, I submit the foregoing suggestions for your consideration. They contemplate no changes in our constitution or plan of organization; they propose the introduction of no new or untried schemes; but they have for their sole object, the removal of obstructions and objections which the

experience of the past has demonstrated to exist, and the development of a more complete, systematic, and efficient method of transacting all the important business of the Association.

The great object is to perfect and perpetuate what has been, already, so well begun.

This great *National Medical Organization* has already existed long enough to have passed the dangers and uncertainties of its childhood, as well as the fickleness of its youth. It is time that its principles, its modes of action, and its important objects were clearly defined, methodically arranged, and matured to the steadiness and vigor of early manhood. Many of the most renowned members of our profession, who took part in its organization, and watched over its earlier years, have been gathered to the home of their fathers; and the nineteen years of active toil that have been added to the lives of many others, have carried them beyond the period of ardent active labor, to the more quiet era of ripening age. They still mingle with us, and at each returning anniversary meeting we hail their presence and crave their council, with the same joy and reverence that characterizes the meeting of the filial son and virtuous father.

But the important question whether this Association, which has already accomplished so much for the advancement of the Educational, Scientific, and Social interests of our noble profession, and maintained a vigorous and unsullied career during the nineteen eventful years that are past, shall be maintained, its modes of action perfected, and its beneficial influences constantly extended, depends entirely upon the generation who are now in the active, vigorous period of early manhood. If those of this class whom I now see before me, have imbibed the spirit of the founders of this Association, and will come forward with alacrity to the work of sustaining and perfecting what their fathers in the profession have begun, its existence will not only be perpetuated from generation to generation, but its beneficent influences will widen and deepen with every returning anniversary. Candor compels me to admonish you, however, that such

a result can never be accomplished by any amount, either of good *wishes* or *fault-finding;* but by prompt, persevering, disinterested action. Let all those who desire to see the standard of medical education steadily elevated from year to year, continue to concentrate, and give expression to, public sentiment through the morning sessions of each anniversary meeting. Let all those who have been complaining for years past, that sufficient attention has not been given by the Association to scientific matters, appear promptly in the several section rooms this afternoon, and aid in organizing and putting into efficient operation each of those subdivisons of our organization. The very complaints and criticisms in which you have heretofore indulged, have demonstrated your appreciation of the work to be accomplished. Hence I feel the more freedom in cordially inviting you to an active participation in the good work.

If the generation, into whose hands are now passing the labors, the honors, and the responsibilities of our time-honored and most beneficent profession, will give faithful heed to these things, the American Medical Association will not only outlive whatever changes and convulsions may be in store for our loved country in the future, but its members will annually come up from the North, the South, the East, and the West, to sit in social harmony, and plan additional means for alleviating human suffering, so long as civilization itself shall continue to bless the tribes of earth. Finally, let us all remember, not only while transacting the business of this Annual Session, but also in all the work that is before us in the future, that the great object of a virtuous and happy life, is neither worldly honors nor worldly treasures, but an inward consciousness of doing GOOD from day to day.

The President read a communication from Mayor Lincoln, inviting the members of the Association to an excursion down the harbor of Boston, to-morrow. It was unanimously voted to accept the invitation.

Papers and reports from special committees appointed or continued at the last session, being next in order, were called for, and the following were presented:—

On Insanity—Report by Dr. H. R. Storer, of Boston. Referred to the Section on Practical Medicine and Obstetrics.

On the Relations of Electricity to the Causes of Disease—Paper from Dr. Littell, of Pennsylvania. Referred to the Section on Practical Medicine and Obstetrics.

On Climatology and Epidemic Diseases of California—Reports by Drs. Logan, of California, and B. H. Catlin, of Connecticut. Referred to the Section on Meteorology and Epidemics.

On Alcohol and its relations to Man—Report by Dr. G. E. Morgan, of New York. Referred to the Section on Practical Medicine and Obstetrics.

On Autopsies and their Relations to Medical Jurisprudence—Report by Dr. T. C. Finnell, of New York. Referred to the Section on Medical Jurisprudence.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Report by Dr. A. N. Bell, of Brooklyn, N.Y. Referred to the Section embracing Hygiene.

On Exsections and their Relation to Conservative Surgery—Papers by Dr. Tewksbury, of Iowa, and Dr. Lyon. Referred to the Section on Surgery.

On Specialists and Specialties—The Committee were requested to report on Wednesday morning at 9 o'clock.

On the Rank of Medical Corps in the Army—Report by Dr. Tripler, U.S.A. Referred to the general session of Wednesday.

On the Rank of Medical Corps in the Navy—Report by Drs. Anderson, of New York, and others. Referred to the general session of Wednesday.

On Small-Pox—Papers by Drs. Ramsey, of New York, and Nebinger, of Philadelphia. Referred to the Section on Hygiene.

Volunteer communications were now called for, and the following papers were presented:—

On Ophthalmology—By Dr. Williams, of Cincinnati. Referred to the Section on Surgery.

Extraction of Foreign Bodies from the Ear and Nose—By Dr. Turnbull, of Philadelphia. Referred to the Section on Surgery.

On Staphyloraphy—By Dr. J. Mason Warren, of Boston. To be read at 3 o'clock P.M., on the 7th, at the Medical College.

On Surgery—By Dr. Henry J. Bigelow, of Boston. To be read at the Medical College at 4 o'clock P.M., of the 7th.

On the Functions of the Nerves of Sensation and Motion—By Dr. Haskell, of Rockport. Referred to the Section on Anatomy and Physiology.

On Dislocations of the Clavicle—By Dr. Holton. Referred to the Section on Surgery.

The Report on Specialties and Specialists, by Dr. Homberger, of New York, was assigned for consideration in general session at 9 o'clock on the 8th.

Eight o'clock was fixed as the hour for beginning the morning sessions of the Convention.

Dr. W. Marsden, President of the College of Physicians and Surgeons of Lower Canada, was introduced, and made a brief address.

It was voted that a committee to nominate officers, consisting of one from each State, be appointed by the various delegations.

The chair announced that the Sections of the Association would meet in their assigned rooms at 3 o'clock P.M.

At fifteen minutes before 2 o'clock the convention adjourned.

In the afternoon the several sections organized by the choice of chairmen and secretaries, and proceeded to the consideration of the reports and papers referred to them.

Soiree and Promenade Concert at the Music Hall.—In the evening, the members of the convention attended a soiree at the Music Hall, tendered them by their professional brethren of Boston, and a few hours were most agreeably spent in social intercourse. The music on this occasion was furnished by Gilmore's full band, and by Mr. J. B. Lang, who exhibited the great power and beauty of the organ, in his usual unsurpassed style. Many ladies graced the occasion with their presence. At 10 o'clock an elegant collation was served.

PROCEEDINGS OF THE SECOND DAY.

The second day's session of the Association was opened at 8:20 A.M., by the President, Dr. N. S. Davis, of Chicago. The names of the gentlemen chosen to nominate officers were reported as follows:—

Maine, Thomas A. Foster; *New Hampshire*, George D. Twitchell, of Keene; *Vermont*, H. D. Holton; *Massachusetts*, A. A. Gould; *Rhode Island*, S. Clapp; *Connecticut*, Elisha B. Nye; *New York*, D. W. C. Enos; *New Jersey*, Ezra M. Hunt; *Pennsylvania*, Dr. Mayburry; *Delaware*, James Couper; *Maryland*, Dr. Kenneman; *Ohio*, S. A. Almy; *District of Columbia*, J. M. Toner; *Indiana*, J. F. Hibberd; *Illinois*, John Bartlett; *Missouri*, J. S. B. Alleyn; *Iowa*, W. F. Peck; *United States Army*, J. J. Woodward; *United States Navy*, T. L. Smith; *Michigan*, H. A. Hitchcock.

Permission was given the committee to retire for consultation at 9 o'clock. The roll of the additional delegates registered since yesterday's session of the Association was read by the Secretary. The number present was then announced to be 468.

Dr. Cox, of Maryland, with a few preliminary remarks, offered the following preamble and resolution, which, he said, demanded the prompt action of the Association:—

Whereas, Montrose A. Pallen, whose name appears in the register, as a permanent member of this Association, has been proved to have been in complicity with an attempt to poison the Croton dam, by which the City of New York is supplied with drinking water—thus imperilling the lives of thousands of his fellow-citizens, therefore

Resolved, That the said Montrose A. Pallen has disgraced his manhood, and the humane profession of which he is an unworthy member; that he is hereby dishonorably discharged from this Association; that the Secretary be required to strike his name from the roll of members, and that he shall never hereafter be eligible to membership in the American Medical Association.

Dr. Cox supported the resolution with a few forcible remarks, which were frequently interrupted by applause. The resolution was fully discussed, and several amendments proposed. A motion by Dr. Toner, of Washington, to postpone all action upon the resolution for one year, called forth a spirited debate, in which Drs. Loomis, of Washington, Dewitt, of New York, Martin, of Worcester, Mayburry, of Pennsylvania, Curry of Westchester, Cox, of Maryland, and others, took part. Dr. Mayburry moved an amendment to the motion to postpone, so that the resolution might be referred to a special committee for consideration, to report on Thursday. The question then recurring on the original resolution, further discussion was had and several amendments were again proposed. The resolution, with several amendments, as finally adopted with a few dissenting voices, reads:—

Whereas, Montrose A. Pallen, whose name appears upon the register as a permanent member of this Association, has been declared, under oath, before the military commission, sitting at Washington at this date, to have been in complicity with an attempt to poison the Croton Reservoir, by which the City of New York is supplied with drinking water—thus imperilling the lives of thousands of his fellow-citizens, therefore

Resolved, That the said Montrose A. Pallen has disgraced his manhood, and the humane profession of which he is an unworthy member—that he is hereby indignantly expelled from this body—that the Secretary be required to strike his name from the roll of members.

It was voted that the final meeting of the Association shall begin on Friday morning at 9 o'clock.

A series of resolutions, offered by Dr. Garrish, of New York, of respect to the memory of the late Dr. Valentine Mott, were adopted by the Society.

On motion of Dr. Catlin, of Connecticut, a committe was appointed to prepare suitable resolutions on the death of Dr. Jonathan Knight, Dr. Benj. Silliman, and Dr. Chas. Hooker.

Reports and papers from special and other committees were next in order, and the following were presented:—

On the Rank of Medical Corps in the Army—Report by Dr. Tripler, U.S.A. Accepted and adopted. On motion of Dr. Cox, of Maryland, a resolution was adopted that the committee be continued, and that each member of this Association use his personal efforts with members of Congress to secure a more elevated grade for the entire medical corps in the Army.

On motion, it was voted that the report of the committee and the subject discussed therein be presented to the next Congress by the President of this Association.

On the Rank of Medical Corps in the Navy—Report by Dr. James Anderson, of New York, read by the Secretary. Accepted and adopted.

On motion, it was resolved that the committee be continued, and that the same course be taken with this report by the President as was voted to be taken with the report from the medical corps in the Army.

The report of the Committee on Publication was submitted by Dr. F. G. Smith. Appended to the report was a resolution authorizing the committee to assess each member such additional sum as will enable them to defray the expense of publishing the forthcoming report, provided the amount in the hands of the treasurer shall prove to be insufficient for the purpose. A protracted discussion followed upon the acceptance and adoption of the report, with the resolution as submitted. A motion to amend, limiting the assessment to one dollar, was lost; also a resolution offered as a substitute for the original resolution. Subsequently, the resolution as reported was adopted, with an amendment changing the word "assess" to "invite" to contribute.

The report of the Committee on Prize Essays was submitted by Dr. D. H. Storer, of Boston. It was announced that a prize had been awarded to the author of the dissertation on the "Surgical Treatment of Morbid Growths in the Larynx, bearing the motto "*Quod vidi scripsi.*" On opening the envelope bearing the corresponding inscription, the author was announced to be Dr. Louis Elsberg, of New York.

The premium offered at the last annual meeting for "the best short and comprehensive tract calculated for circulation among

females," on Criminal Abortions, was awarded to Dr. H. R. Storer, of Boston.

The Report on Medical Education was submitted by Dr. Antisell. Referred to the Committee on Publication.

The Report of the Treasurer was submitted, showing the amount in the treasury to be $301.95.

A paper on "Compulsory Vaccination" was referred to the Committee on Medical Jurisprudence.

The Report of the Committee on Revision of the Constitution was submitted by the President of the Association, Dr. Parsons occupying the chair temporarily. The report was accepted and adopted, and the thanks of the Association were voted to the Committee for the satisfactory manner in which they had discharged their duty.

The Report of the Committee on Necrology was submitted without reading, and referred to the Committee on Publication.

During the session, the Secretary read the following names of gentlemen offered as candidates for election for permanent membership, reported by the Committee of Arrangements:—

Dr. O. H. Bradley, East Jaffery, N. H., nominated by Dr. L. E. Simonds, Saxton's River, Vt.

Dr. F. Winsor, Winchester, Mass., and Dr. Ed. D. G. Smith, U.S.N., nominated by Dr. L. A. Smith.

Dr. R. H. King, Wolfsboro', Carroll Co., N.H., nominated by Dr. David T. Parker, Farmington, N.H.

Dr. Alba Kemp, New Salem, Mass., nominated by Dr Ed. Barton, Orange, Mass.

Dr. C. D. Bemis, nominated by Dr. D. H. Storer.

Dr. Dryden Smith, Biddeford, Me., and Dr. John L. Allen, Saco, Me., nominated by Dr. M. P. Monroe, President of Maine Medical Association.

Dr. John Yale, Ware, Mass., Dr. David W. Miner, Ware, Mass., and Dr. J. W. Winslow, East Hampton, Mass., nominated by Dr Martin, of Worcester.

Dr. Benj. J. Mann, Roxbury, Mass., nominated by Dr. J. L. Miller, Pittsfield.

Dr. J. H. Waterman, Westfield, Mass., nominated by Dr. Orcutt, Hardwick, Mass.

Dr. J. H. Longenecker, nominated by Dr. Antisell, Surgeon Vols.

Dr. J. S. Lombard, Boston, Dr. J. Q. O. McCollister, S. Groton, Mass., and Dr. George Jewett, Fitchburg, Mass., nominated by Drs. Hitchcock and Dale.

Dr. E. W. Sargent, W. Tennessee, Dr. Edwin Segur, Springfield, Mass., Dr. Jefferson Church, Springfield, Mass., and Dr. Alexander S. McLean, Springfield, Mass., nominated by Dr. Worthington Hooker.

Dr. Samuel S. Webber, Boston, and Dr. J. B. Gould, Templeton, Mass., nominated by Dr. J. N. Borland.

Dr. Silas B. Presby, Taunton, Mass., nominated by Dr. J. R. Bronson.

The gentlemen were unanimously elected by the Association.

The Nominating Committee reported a resolution that the several sections shall select the subjects germain to their organizations, and also appoint the committees thereon.

The Committee of Arrangements announced that Judge Warren, President of the Providence Railroad, had offered for the use of the Association a special train to Readville, for the purpose of visiting the military hospital there, at any hour that they might desire to use it. Also, that the Superintendent of the Boston public schools had caused volumes of the recent report to be sent to the State House to be distributed to such gentlemen as might wish them.

Dr. Toner, of Washington, offered an amendment to the Constitution, that delegates, on registering their names, shall pay the sum of $5, and permanent members, $3. The amendment, according to the Constitution, lies over until next year.

The Committee on Nominations, through their chairman, reported that they had decided upon Cincinnati, Ohio, as the next place of meeting of the Association. Dr. Cox, of Maryland, offered an amendment, substituting Baltimore, Md., for Cincinnati, O. A spirited debate followed, and at length the motion to amend was carried, and Baltimore decided upon as the next place of meeting.

A committee was appointed to draw up a series of resolutions on the death of Dr. S. D. Willard, late Secretary of the New York State Medical Society, and also to prepare a short biographical sketch of his life, both to be submitted to the Committee on Necrology.

A communication was received from Dr. Gross, Surgeon in charge of the military hospital at Readville, inviting the Association to visit Readville by special train on Thursday forenoon at 9 o'clock.

The convention adjourned at 2 o'clock. At the time of adjournment, the number of names registered on the books was 576, and delegates were still coming in. The sessions of the several sections were held in the afternoon.

Social Entertainments in the Evening.—Dr. J. Bigelow, Dr. D. H. Storer, Dr. Warren, Dr. Shattuck, Drs. Dix and H. R.

Storer, Dr. H. J. Bigelow, Dr. Upham, and Dr. Williams entertained the gentlemen of the Association, with their ladies, in an elegant and generous manner. Music, vocal and instrumental, charmed the ears of the guests, and every effort was made to make the evening agreeable and pleasant.

The residences of the gentlemen named above were visited during the latter part of the evening by Gilmore's Band, and serenaded in honor of their guests.

PROCEEDINGS OF THE THIRD DAY.

The Convention was called to order at 8¼, A.M., by the President.

On motion of Dr. Mayburry, of Pennsylvania, it was

Resolved, That the Permanent-Secretary be instructed to prefix to the List of Officers and Permanent Members, a list of the Ex-Presidents and Ex-Vice-Presidents of the Association.

Dr. Jarvis, of Dorchester, inquired concerning the functions of the Committee on Publication. A discussion on this question followed, in which the President, Drs. Jarvis, Sayre, of New York, Tripler, and Hibberd participated. By a vote of 45 to 37, a resolution was adopted giving the committee discriminating power.

On motion of Dr. Jarvis, of Dorchester, it was voted to establish a section on psychology.

Dr. Garrish, of New York, moved that a section on ophthalmic medicine be established.

Dr. Twitchell, of N. Hampshire, favored it. Dr. Williams, of Cincinnati, also favored the establishment of such a section, as there was need for thorough investigation of a science which had in the past ten years become, as it were, new, all the old landmarks having been swept away. The motion was opposed by Dr. Burns, of Pennsylvania, Dr. A. H. Stevens, of N. York, and others. It was finally rejected.

On motion of Dr. Hibberd, of Indiana, the section on anatomy and physiology was abolished, the subject of anatomy being assigned to the surgical section, and that of physiology to the section on hygiene.

A resolution was offered by Dr. Couper, of Delaware, and

read by Dr. Tripler, of the United States Army, that this Society send a delegate annually to the convention of medical superintendents of insane establishments, and that efforts be made to cause a more intimate relation between the two organizations; the delegate to be selected by the President. Amendments to the Constitution to be acted upon at the next annual meeting were offered in relation to permanent members, delegates from local societies, and members by invitation.

The Committee on Nomination reported that the time of the next meeting shall be in June, and submitted the following list of officers:—

President, Dr. D. H. Storer, of Massachusetts, *Vice-Presidents*, Drs. James F. Hibberd, of Indiana; S. O. Almy, of Ohio; T. C. Dunn, of Rhode Island; W. P. Johnson, of the District of Columbia; *Assistant-Secretary*, Dr. J. E. Morgan, of Maryland.

Committee on Arrangements, Drs. C. C. Cox, W. C. Van Bibler, Franklin Donelson, L. H. Steiner, George G. Miltenberger, William Whitridge, J. E. Morgan, all of Baltimore.

Committee on Publication, Drs. F. G. Smith, of Pennsylvania; H. F. Askew, of Delaware; William Mayburry, of Pennsylvania; W. B. Atkinson, of Pennsylvania; H. R. Storer, of Massachusetts; Caspar Wister, of Pennsylvania.

Committee on Prize Essays, Drs. Austin Flint, senior, J. R. Wood, Ellsworth Elliot, E. Krackowitzer, D. C. Enos, all of New York.

Committee on Medical Education, Drs. S. D. Gross, of Pennsylvania; G. P. Twitchell, of New Hampshire; C. A. Pope, of Missouri; O. W. Holmes, of Massachusetts; Grafton Tyler, of District Columbia.

Medical Literature (present committee continued over), Dr. Charles A. Lee, of New York; T. F. Rochester, of New York; C. C. Cox, of Maryland; Albert Smith, of New Hampshire; A. Nebinger, of Pennsylvania.

Committee on American Necrology, Drs. C. C. Cox, of Maryland; E. B. Stevens, of Ohio; W. F. Peck, of Iowa; H. Van Dusen, of Wisconsin; Noble Young, of the District of Columbia; Josiah Simpson, of the United States Army; J. C. Weston, of Maine; Henry Bronson, of Connecticut; Henry Noble, of Illinois; Charles Eversfield, of the United States Navy; William B. Fletcher, of Indiana; I. C. Hupp, of Western Virginia; J. Mauran, of Rhode Island; William K. Bowling, of Tennessee; J. P. Finch, of New Hampshire; James Couper, of Delaware; W. L. Linton, of Missouri; Charles L. Allen, of Vermont; H. G. Clark, of Massachusetts; J. H. Griscom, of New York; E. M. Moore, of New York; Charles A. Logan, of Kansas; William B. Little, of California; Stuart, of Minnesota; Henry Miller, of Kentucky; S. G. Armor, of Michigan; William Pierson, of New York; Fleming, of Pennsylvania; E. Wallace, of Penn.

The report was adopted as a whole, with the exception of the time of holding the next annual meeting. It was voted to meet on the first Tuesday in May, 1866, instead of June.

Dr. Allen, of New York, with a few explanatory remarks, moved that the vote adopting the resolution expelling Dr. Pallen be reconsidered. A sharp discussion ensued, and the vote

being taken, the result was doubted. The yeas and nays were then called for by Dr. Sayre, of New York, so that the names of the gentlemen might appear on the record. The question being put, "Shall the yeas and nays be taken," was lost. A standing vote was taken, and the motion to reconsider was also lost.

Dr. Hooker, of Connecticut, from a special committee, reported the following resolutions on the death of Dr. Knight, Dr. Charles Hooker, and Dr. Benjamin Silliman, all of Connecticut. The report was accepted, and the resolutions adopted:

Resolved, That in the death of Dr. Jonathan Knight, twice a President of this Association, the duties of which office he discharged with extraordinary ability, the Medical Profession has lost one of its brightest ornaments; an eminent surgeon, who was conservative in the true sense of that term; a teacher, who by his transparent clearness and terse eloquence, unsurpassed among medical men in this country, exerted through fifty years a wide influence upon the character of the American medical mind: a Christian gentleman, whose genial qualities won for him, to an extent seldom witnessed, the affections not only of intimate friends, but of all those who knew him.

Resolved, That in lamenting the sudden departure from this life of Dr. Chas. Hooker, at the height of his usefulness, we cherish the memory of one whose independent mind and restless activity of Christian faithfulness obtained for him great eminence, both as a physician and teacher of medicine; and we call to mind with special pleasure, his earnest devotion from the outset to the interests of this Association.

Resolved, That we revere the memory of Professor Benjamin Silliman, who as a leader in the diffusion of science in this country, and in other countries also, was one of the great benefactors of the race, and who by his urbanity, kindness of heart, and cheerful piety, enhanced to an uncommon degree his influence upon the community as a man of science.

Dr. Furman, of New York, presented resolutions adopted by the State Medical Society of New York, and referred to the National Medical Society, against newspaper advertising, except merely the card of the physician.

Dr. Julius Homberger, of New York, Chairman of the Committee on Specialties and Specialists, presented an elaborate individual report, favoring advertising by specialists. The report was laid upon the table for the present, and a second report was submitted by Dr. H. R. Storer, of Boston, also a member of the committee, defending specialists.

Dr. D. Humphreys Storer spoke concerning a passage in the report relating to himself, denying that he was ever a specialist. Dr. H. R. Storer, in reply, defended his own ground. This report was also laid upon the table, temporarily.

Dr. W. Hooker, of Connecticut, another member of the committee, reported that he had not had sufficient time to investigate the report of Dr. Homberger, and therefore could not give an opinion concerning it. With the report of Dr. H. R. Storer he could not entirely agree, especially in that part of the report which referred to specialists as the leaders of the profession.

The reports were then taken from the table for consideration.

Dr. Martin made a motion that the reports be referred back to the committee for consideration another year, and supported his motion at some length.

Dr. Bissell, of New York, moved to amend the previous motion, and moved that the reports be referred to the Committee on Medical Ethics.

Dr. Toner, of Washington, criticised the reports in a severe manner.

Dr. Homberger, of New York, defended his position, and stated as the reason why he did not send his report to the other members of the committee at an earlier date, that he knew they would not agree with him and would not sign it. His remarks were not received very favorably by the members.

Dr. Mayburry, of Pennsylvania, favored strongly the referring of the reports to the Committee on Medical Ethics.

The question was then taken on referring the reports to the Committee on Ethics, and decided in the affirmative. On motion of Dr. Twitchell, of New Hampshire, the Committee on Medical Ethics was instructed to report some definite action on this subject.

The convention adjourned at half-past 12 o'clock.

The Excursion down the Harbor.—The gentlemen of the Association, immediately after the adjournment of the business meeting at the State House, proceeded in a body to Commercial Wharf, where they embarked in the steamers Rose Standish and Russia, for the purpose of taking an excursion down the harbor, by invitation of the City Council. On board of the Rose Standish, besides the members of the Medical Society, were His Honor the Mayor, and several members of the City Council, part of the Committee of Arrangements, Chief of

Police Kurtz, a number of invited guests, and Gilmore's full military band in their new uniform. On the Russia, the Brigade Band was stationed. The party on both steamers numbered nearly, if not quite, 1000 people.

The two steamers proceeded down the channel side-by-side. As the party passed the revenue cutter Pawtuxet, they were received with a salute, and the hoisting of the flag. The steamers acknowledged the compliment by dipping their colors and sounding their whistles. The boys on the Massachusetts, school ship, filling the deck and rigging, cheered the excursion lustily and run up the colors. This compliment was also acknowledged by the Rose Standish and the Russia, and the cheers returned by the passengers.

The first landing of the party was at Deer Island, where they were received by Hon. Moses Kimball, Chairman of the Committee on Public Institutions, and were invited by that gentleman to walk through the House of Industry, and examine it as much as they desired. After about a half-hour's time had been consumed in visiting the island, the party reëmbarked, and proceeded further down the harbor.

By the kind permission of Major H. A. Allen, of the Second United States Artillery, commanding the post at Fort Warren, the excursionists were allowed to land, but were requested by the Major to have no conversation with the prisoners. The United States officers at Fort Warren were very attentive to the guests, and extended to them, during their short stay, every attention that was in their power. Major Joel Severns, of the U.S. Volunteers, is post-surgeon.

About four o'clock, the party reached Long Island, and disembarked. In the "Cottage," and in the tents on either side, tables were spread with all the delicacies of the season, and to this attractive feature the attention of the gentlemen was directed immediately upon landing.

After the very pleasant duty of relieving the tables of their burden had been performed, His Honor the Mayor mounted a chair, and calling the gentlemen to order, addressed the company in a speech full of the most cordial hospitality and gener-

ous appreciation of the standing and value of the medical profession. We regret that want of space prevents our publishing his remarks in full.

Mayor Lincoln was frequently interrupted with most emphatic applause and enthusiastic cheering. After partial silence had been restored, the Mayor called upon Dr. Davis, President of the Association, who was loudly cheered upon taking the stand—or chair.

He said that he was exceedingly happy to meet the gentleman under circumstances so pleasing to each individual around him. The assembly, he said, almost overwhelmed him with recollections of the past. The historic old city of Boston, which has sometimes been called the cradle of liberty, everything around us, not only the old shaft on Bunker Hill; but the old church, the old graveyard, even the by-ways and crooked ways [laughter] moved him with pleasing recollections of the past. He was happy as he looked around him, as he stood with his feet, as it were, in the eastern extreme of our glorious Union, to see many who would recollect with him a similar excursion to this, west of the Mississippi, and the kind attentions which the Association received there. At this time it should not be forgotten that away in the distant South, even in South Carolina, this Association has assembled and has received the same kind attentions. He would not dare to allude to this, even as a reminiscence, did he not know that the valor of our soldiers brought the South to our fold once again. [Applause.] He said that when his mind travelled over scenes and the pleasing reminiscences of the past years of the life of this Association, which has met in every section of our country, his heart was too full, and his tongue could not express his feelings. We may meet, continued the speaker, for good, to rack our brains in devising better medicines to alleviate the sufferings of mankind, but after all it is the social element in our conventions that makes them so attractive to us. In conclusion, Dr. Davis cordially thanked the City Council, in the name of the National Medical Society, for the generous attention extended to them.

Dr. Woodward, of the Surgeon-General's office, at Washington, was then introduced. He spoke concerning the medical profession in the army, of their perilous position, and their devotion to their duties, saying that had it not been for the aid which our armies have received from the profession they would have been able to do but little in this war.

Dr. Storer, the newly elected President of the Association, was then called for. He was introduced to the gentlemen by His Honor the Mayor in rather a peculiar manner, which caused much laughter. Dr. Storer, in speaking of his election as President of the Association, said that he had hoped that some other gentleman would have been chosen to represent the National Medical Association than himself. He said that he had not the presumption to suppose that he possessed qualifica-

tions that were not possessed by the great majority of the members of the Association, but he received the honor as a compliment to Massachusetts. Dr. Storer spoke of the social influence of these conventions. Dr. Worthington Hooker, of Connecticut, made a short speech, speaking in a happy manner of his State, Connecticut, and of the generous manner in which the Association had been treated by the City of Boston. Rev. Dr. Lothrop was the next speaker. In speaking of the medical profession, he said that in his opinion it stands at the top of the professions, and demands the highest gratitude from the infinite and incalculable service which it renders to mankind. Dr. Sayre, of New York, in a short speech, acknowledged the hospitality with which the convention has been received in Boston. Short speeches were also made by Dr. Doherty, of Connecticut, Dr. J. P. Ordway, of Boston, Dr. Curry, of Westchester, N.Y., and others.

About half-past eight o'clock, the party again embarked on the return "voyage." As the steamers left the wharf, rockets and other fireworks were discharged from their decks, and the bands performed favorite airs. The sail home by moonlight was exceedingly pleasant, and the time was occupied in listening to the fine music of the bands, and to singing, conversing, &c. As the steamers passed the pilot boat No. 7, that vessel burned brilliant blue-lights, which were noticed with cheering. On landing at Commercial Wharf, the passengers of the Rose Standish formed in procession and marched to the Tremont House to the music of Gilmore's band, where they separated.

The Committee of Arrangements of the City Council deserve much credit for the admirable manner in which the arrangements for the excursion were carried out. Everything that could be thought of for the comfort and enjoyment of the company was provided.

PROCEEDINGS OF THE FOURTH DAY.

The Association was called to order at 9 o'clock, by the President. Reports from sections were received and appropriately referred, and it was voted that such bills as might be presented therein should be paid by the Treasurer of the Association.

After the transaction of some unimportant business, Drs. Leidy, F. G. Smith, and H. Hartshorn were appointed a committee on the paper of Dr. Corse, on "the microscope."

Dr. J. P. Ordway of Boston, presented a protest against the action of the Association in adopting the resolutions expelling Dr. Montrose A. Pallen. After the words of the resolution the document reads as follows:—

Whereas, the association has refused by vote to reconsider its action in this behalf, now, therefore,

We, the undersigned, in attendance, while we execrate the crime with which Dr. Pallen stands charged, and would, if his guilt were established, most promptly and heartily vote for his expulsion, do most respectfully protest against the action of this association, as above recited, on the general principle that all sense of right and justice, as well as the established rules of this association, demand that no man shall be condemned and punished until his guilt is established. And we desire that this protest shall be placed upon the record in the minutes of the proceedings of this annual meeting.

Signed by Drs. James F. Hibberd, Henry I. Bowditch, George B. Twitchell, and about thirty other gentleman.

The ground taken in the protest was ably defended by Dr. Ordway, and after some discussion, on motion of Dr. Hunt, of New Jersey, a special committee of three, consisting of Drs. Hunt, Bibben, of New York, and Baxter, U.S.A., were appointed to prepare an answer to the paper.

A letter from Dr. W. H. Mussey, of Cincinnati, was read by the President, which severely censured the "course of Surgeon-General Barnes, in consulting with a homœopath in the case of Secretary Seward and son, and allowing a quack to prescribe medically whilst he was attending surgically," characterizing it as an "offence of no mean proportions; the high position of the parties making the demoralizing effect the greater." The facts alleged in the letter were declared to be without foundation by Dr. Woodward, of Washington.

At this point, His Excellency the Governor of the Commonwealth, preceded by the Sergeant-at-Arms, and accompanied by Assistant-Surgeon-General Hooker, entered the hall, and was received by the Association, the members rising in their seats. His Excellency was introduced by the President, and addressed the Association as follows:—

Mr. President, and Gentlemen of the Convention:—I did not presume to enter the hall with the intention of interrupting the proceedings of the body

which has met beneath the arches of the Hall of the House of Representatives, but for the purpose, in the first place, of testifying by my presence and my voice, and to respectfully acknowledge the honor conferred upon me by the Convention, in the invitation to attend and to address this meeting on the morning of its first convening. Having been prevented by illness from doing so, I felt it due to myself and the body assembled, to avail myself of the earliest practical moment of passing a short time in the presence of this large assembly of the most learned and wisest of the medical profession; but more, I must say, I felt it to be due to the Commonwealth, one of whose official representatives I am, to testify in praise, and with emphasis also, to the interest which it attaches to such meetings of gentlemen of the learned profession of medicine. The interest it attaches to it, not only from its relation to the cause of science, but in relation to the cause of popular progress in many of the departments of human learning. The interest also which it attaches to the medical profession in its relation to the patriotism of the people, since that profession represents the body of men whose devotion, whose energy, whose skill, whose ability, and whose usefulness have not been surpassed, during these last four years of Southern war, by any similar number of citizens of the United States. [Applause.] And I trust, Mr. President, that this meeting in the City of Boston will be but the introduction of your Association to the city, and that the capital of the Commonwealth may witness many returns of a similar reunion. And I hope that wherever your honorable body may meet hereafter, it will receive the same cordial welcome of an intelligent people capable of appreciating learning, capable of understanding adequately and valuing the contributions of such men, alike to the health and morals, and to the sentiments of the people. For I believe, sir, that reasonable, progressive, and philosophic views, in regard to the treatment of disease, or deranged health in all the forms of altered life, are both useful in respect to that which is perishable in our mortal bodies, and in respect to that which is eternal in the immortal mind. [Cheers.] I am happy to learn, Mr. President, that the meeting of the Convention has been attended on the present occasion with so many circumstances of interest and value, and cordially thanking you for this opportunity of addressing the Convention, and wishing the body themselves future happiness and prosperity, for many years to come, I have the honor to take my leave. [Cheers.]

At the conclusion of his address His Excellency retired, and the Association resumed its business.

The committee appointed to prepare an answer to the protest in the case of Dr. Pallen, reported as follows, through its chairman, Dr. Hunt:—

We, the undersigned, beg leave to recommend the following reply to the protest of certain members of the American Medical Association against the action of the said Association in the case of one Montrose A. Pallen.

We remark, first, as to the right of protest in an association of this kind, that it is one which needs scarcely ever to be exercised, and the use of which is in general a bad precedent. When a motion is fairly before a body, is carefully considered, and then deliberately acted upon, that submission to law and to a majority which is important to be cultivated as a principle, and which is particularly needed to be exemplified by prominent men as the grand lesson taught by the times, should lead the minority to be content to express their dissent in the usual method. With due deference to those who signed the protest, we cannot but express our regret that, while in the course of years many points have been discussed before this body, involving direct medical interests, and yet have been left to the decisions of the majority, so far as we know, the first case calling forth a protest is in the behalf of a man, in reference to whom we had the

distinct statement of Dr. C. C. Cox, of Maryland, that he, early in the war, left St. Louis, in the interests of the rebellion, and that the testimony in the case referred to was explicit in reference to his complicity with the attempted crime. We at least exercise no right not already granted to these protestants, in expressing our dissent from the propriety of their action in not submitting to the decision of this body after the question was once discussed, and then twice after reconsidered and the former action reaffirmed, and that too in the absence of the gentlemen who were the movers of the resolution. Secondly, we beg leave to notice the fact that the protestants have erred as to matters of fact. The Association has in no way formally declared that no sufficient proof had been adduced of the guilt of Montrose A. Pallen. The fact that the word proved was amended by the insertion of the words "has been declared under oath," is merely the difference between the legal issuing of a case and that kind of evidence which is entirely satisfactory and conclusive to even a guarded public sentiment. It was on this evidence and on the statements and opinions of members, that the Association saw fit to base their action. They felt that the course of Pallen, previous to this averred act, and the testimony in the case, were sufficient grounds for their action. There are times when a man may be known by the company he keeps, and in such a barbarous wickedness as the one involved, the whole testimony and evil association justify us in this action.

If the case was one that could be tried by us, so much the better; but the grounds of suspicion are so enormous, as in our view to justify our course of action. We are not injuring him, for the cloud already upon him is one to which ours will not add a feather. We are but protecting ourselves. When the evidence of mistake is shown, we will gladly acknowledge our error and retrace our course. But is it not best to separate from our Association one who has been in intimate association with the vilest enemies of humanity? We have high ideas of personal rights, but one who has been in leagued friendship with those making the boldest attack on the dearest personal rights of universal humanity cannot complain, until his character is vindicated, that he is cut off from association with those who by profession, as well as by their manhood, are philanthropists and patriots. While we agree to the general idea that no man shall be condemned and punished until his guilt is established, we look upon guilt as having degrees, and as sometimes being established, independent of the decision of the courts; and in cutting him off from the Association, we do not recognize ourselves as "condemning and punishing him" in the legal and opprobrious sense in which those terms are used when one is consigned to the prison or the gallows; but as protecting ourselves from the odium of association with one who, we have evidence enough to satisfy us, has chosen as associates not only rebels, but assassins, and who, while he is unable to clear his skirts, is not particularly jeopardized in life, liberty, or the pursuit of happiness, by our act.

The President then announced that he had received the following telegraphic despatch from Montrose A. Pallen:—

MONTREAL, CANADA EAST, JUNE 9.

To the President of the National Medical Association:—I have been expelled from the association upon unrebutted testimony for participating in a crime which I execrate as much as any gentleman in the convention. I will produce affidavits to prove Sandford Conover's evidence to be infamous perjury. I beg a reconsideration of the vote, and that it be referred to a committee before whom I pledge myself to still preserve the fair fame belonging to every member of the association. MONTROSE A. PALLEN.

A motion was made to accept and adopt the report of the committee as the sense of the association. The motion was discussed at some length, and finally laid upon the table.

A special committee on insanity was appointed, consisting of Drs. Alfred Hitchcock, of Massachusetts; Isaac Ray, of Rhode Island; S. H. Tewksbury, of Maine; B. F. Barker, of New York; and J. S. Butler, of Connecticut.

The Secretary read the following resolution offered by Dr. Garrish, of New York:—

Resolved, That the American Medical Association, with heartfelt and national pride, extend to the Army and Navy Surgeons their thanks for the prompt manner in which they have met the calls and perils of the battle field, demanded by our country.

Resolved, That we tender to the families and friends of those who have sacrificed their lives in the cause of humanity, our earnest sympathies for the bereavement the have sustained. They have restored to us and the whole nation a peaceful and happy home for all future time.

The resolutions were adopted.

On motion, the duty of revising the list of permanent members for republication was referred to the committee on medical necrology.

Dr. Burns, of Pennsylvania, presented the following resolutions, which were unanimously adopted:—

Resolved, That the American Medical Association, in closing their annual session in the city of Boston, June 9th, 1865, do most sincerely tender a vote of thanks to their medical brethern, the Governor of Massachusetts, city authorities and inhabitants of Boston, for their very kind and generous hospitalities to the assembled delegates from all parts of our country; and in biding them farewell we shall ever cherish the remembrance of their kindness, and express the hope that prosperity, with every domestic, social, intellectual, and religious blessing may be their abiding portion.

By Dr. Kennedy of New York, resolutions were offered as follows:—

Resolved, That the thanks of the American Medical Association be and are hereby tendered to His Honor Mayor Lincoln and the authorities of the city of Boston, for the kind reception and splendid entertainment given to the association during their stay in the city.

Resolved, That the thanks of the association are due, and are hereby presented, to the committee of arrangements of the association for the faithful and satisfactory manner in which they have discharged the arduous duties imposed upon them.

Resolved, That the thanks of the association be presented to our president, Dr. N. S. Davis, for the singularly able and impartial manner in which he has discharged the duties of his office.

The following was offered by Dr. Van Kleek, of New York:—

Resolved, That this is a National Association, and as, in its earlier days, we enjoyed with pleasure and profit the intercourse with our professional brothers of all parts of our country, and as the unhappy feud which for four years divided the nation, has now ceased and peace has again come, we trust forever, —so we hope soon again to meet our members and delegates from the South on this platform of fraternalization, and to this end we extend to them an earnest invitation and promise them a cordial welcome.

The following by Dr. Bowditch was offered by Dr. Hibberd:

Resolved, That this association has learned with deep regret that there are fears of famine and consequent disease and pestilence occurring in some parts of Georgia and South Carolina, passed over by Gen. Sherman's army in its victorious course.

Resolved, That this association would urge upon the Sanitary and Christian Commissions to send agents to learn the exact facts, and, if need be, to take prompt and efficient measures to prevent or mitigate such a distressing result.

The following was offered by Dr. Bronson:—

Resolved, That the thanks of this association be and they are hereby tendered to Major John Morrisey, the Sergeant-at-Arms of the Massachusetts Legislature, and his assistants, for the very able and efficient manner in which they have performed the functions of their offices during the sessions of the association.

The resolutions were all unanimously adopted.

The venerable Dr. Child made a short address, speaking as follows:—

I feel extremely gratified that I am permitted on behalf of the State Medical Society to be present on this occasion, and I have also been extremely gratified in the proceedings of the association; and, permit me to say, very much so as respects the management of the presiding officer [cheers]; and I would unite in expressing the thanks of the association for the worthy manner in which he has performed his services, and I hope a reply will be heard from him on this parting occasion. [Applause.]

The President of the Association, Dr. Davis, then delivered his farewell address, which was as follows:—

GENTLEMEN:—I thought when I was down upon the island under that cottage roof, posted upon a chair, that the emotions within me were such as almost entirely to forbid utterance; but I confess, notwithstanding the warm congratulations and cordial feelings which surrounded us there, they have fallen below what you have put upon me to do at the close of this meeting, in the manifestations of your approval of the manner in which I have been permitted to discharge the duties of my office. Compelled last year by the amendment of the constitution to serve two years in these same labors, I find so warm a manifestation of your approval as surely will never be forgotten by me; this time has been an enjoyment that will leave its impress upon the deepest recesses of my heart while I am permitted to live, no matter what may be the vicissitudes that await me in the future, or changes which may take place in this our national organization. The feelings which have been impressed upon me here will remain unobliterated while time lasts, and I fondly

hope will not be wasted while eternity itself shall endure. But, gentlemen, I must, in turn, offer my most cordial thanks to every one of you, for if we have had excellent meetings, it is because you, every one of you, have kindly sustained me in the discharge of my duty, and, therefore, I say, I am as much indebted to you, and far more than you are to me; therefore, I give you my thanks. And I tender my thanks cordially to the City of Boston, and to all those in the vicinity, for the manner in which I, as an humble individual, have been treated. Before I close, let me make one more observation. I have been very strongly impressed for twelve months past with the feeling that this Association had arrived at a crisis of its existence; and I have felt at the opening of the session, this meeting here in the old cradle of liberty, almost in sight of the waves of the Atlantic, would determine whether this Association was to be perpetuated to the latest generations, gathering the profession from the four quarters of the continent, not merely from East or West, or North or South, but from the whole continent, and uniting it in a common brotherhood for defending the interests of humanity, as long as civilization itself shall endure—or whether we should culminate, and, like the transient meteor in the heavens, make our mark and fade away. And I felt strongly impressed at the time, because I saw many aged among us, and many young who looked to the aged, and because they did not come up to their expectations fully, were hanging back, and inquiring why? And it seemed we had arrived exactly at the period where the Association was about to be transferred from one generation to the next, and as I commenced very young, I felt that I stood as a connecting link, that my right hand was on the shoulder of the aged, and my left upon the shoulder of the younger members of the profession, and if I could hold them together and put the burden of the Association over from the shoulders of the one fairly upon the other, I felt that it would stand firm through the coming trial. My brethren of the profession, I feel that the crisis has passed. [Cheers.] The Association is established upon the firm shoulders of the next generation. I am sure they will pass it to the next and

along to others as long as civilization shall exist, therefore I cordially sympathize with you in all the enjoyments of this occasion; and I hope, while I am permitted to live and be able to go by steam-ship or rail-car, that I will find time to enjoy a green oasis every year, in meeting you as long as age shall let me linger with you. [Cheers and applause.]

At the close of the address of Dr. Davis, three hearty cheers were given for that gentleman.

At a quarter past one o'clock, the Convention adjourned to meet again on the first Tuesday in May, 1866, in the City of Baltimore.

The annual meeting of the Association of 1865 has been more largely attended than on any previous occasion, six hundred and sixteen members and delegates having registered their names on the books of the committee. It is generally regarded as having been a most interesting and successful convention.

A Visit to the Readville Hospital.—After the adjournment, a considerable number of the physicians availed themselves of an invitation which had been received to visit the U.S.A. General Hospital, at Readville, free passes having been tendered by the Providence Railroad Company. On the arrival of the party at Readville, they were welcomed by the surgeon in charge, who, with his assistants, afforded the visitors every facility for examining the institution. The officers of the Hospital are now as follows:—Dr. Gross, Surgeon of Volunteers, in charge, and Acting-Assistant-Surgeons Wilbur, Langmaid, Osborne, and Ropes.

Quackery in Turkey.—In consequence of the death of a soldier having occurred in Constantinople, after taking the prescription of a quack doctor, the medical director-general ordered a commission of inquiry into the quality of the medicine. The result has been a seizure of the whole of his drugs, he himself being arrested for illegal practice.

Small-Pox in Algiers.—The prevalence of small-pox in Algiers has induced the French medical practitioners to instruct the natives in the practice of vaccination. It is said that this operation has now become quite popular amongst them.

Selections.

THE PROOFS THAT LITHOTRITY IS AN EMINENTLY SUCCESSFUL OPERATION.

By HENRY THOMPSON, F.R.C.S., Surgeon Extraordinary to H.M. the King of the Belgians, Surgeon to University College Hospital.

I am induced to offer a few remarks on this subject, partly because a statement has recently appeared in *the Lancet*, made by my friend Mr. Holmes Coote, to the effect that "the general impression formed respecting the relative merit of the two operations"—namely lithotomy and lithotrity—is highly unfavorable to the latter, for "the dangers attending lithotrity are greater than are commonly supposed; and that the very favorable returns quoted by some surgeons proceed from their considering each 'sitting' as a completed case, whereas the result should be regarded only after the patient has been freed of his complaint."

One portion of this extract must be noticed first and briefly. If any surgeons are in the habit of representing each of the several sittings required to remove a stone as a completed case, there is but one term that can characterize such conduct, and it is a term that I dare to employ, only because I do not believe there are any to whom it is in the least degree applicable. Such conduct would simply be grossly fraudulent. Any person adopting it would state that he had operated on five, seven, or ten patients (or whatever number of sittings might have been necessary to free any given patient from his stone), when in truth he had operated only on one. I have had to examine many statements in relation to this subject, but I have never had reason to suspect such a practice. Several weeks have elapsed since the suggestion was made, and, observing that at present it has elicited no remark, I felt that it could not continue longer unnoticed.

But, secondly, in relation to the important question of the dangers or the success of lithotrity, I confess that it is necessary to differ very widely from the opinion which has been said to be general. I think I shall be able to show that lithotrity is a safe and efficient operation for other cases than those belonging to the very narrow category to which Mr. Coote would confine it—viz., "almost exclusively to cases of men in middle or advanced life, of gouty habit, and with a deep perineum, in whom,

after intervals of a few months, a small uric-acid calculus drops from the kidney into the bladder, the kidneys being in their general structure healthy." It is further enjoined that this calculus is to be crushed "while it is yet small." Further still—"the lithotrite should, under no circumstances, be used for the purpose of crushing an oxalate-of-lime calculus."

With the object of aiding the practical solution of this question, a group of consecutive cases of lithotrity will be presented with their results. I shall, in short, adduce my own personal experience of the operation during the year just closed; that is, a brief statement of every case in which I have performed and completed lithotrity between Jan. 1st and Dec. 31st, 1864. And, surely, it will be admitted that whether this *resume* affords an exceptionally good result or not (and I contend that it does not), the possibility of such a result suffices to prove the extreme value of the operation for a very considerable range of cases. The patients on whom I have so operated during 1864, are nineteen in number; and I think the result may be regarded, although but a small contribution, yet as numerically much more valuable for inferential purposes than so small a number as four cases, of which two were fatal, which furnished the theme for Mr. Coote's remarks. As will appear, not one of mine was so; in one case only the operation was followed by death in a few weeks, opinions respecting the cause of which may be various; the others made good recoveries.

I ought to premise that, having personally no choice as to the performance of the cutting or of the crushing operation, I have been ready to apply either, according to what, after careful consideration of all the circumstances of the case, appeared to be the best for it. Lastly, I have refused to operate in any way upon one case only—one in which the last chance of affording relief had wholly disappeared. Favorable cases, therefore, have not been selected for either proceeding. That there may be no error, I shall in each case name one individual who has seen it with me, so that a guarantee is afforded of the accuracy of my statement. Without any fear that it would be called in question, I still prefer this as the best rule to adopt, since it places the facts stated beyond the suspicion of error, and within the reach of present inquiry.

Case 1. A gentleman, aged seventy-four. Uric-acid stone; medium size.* Seven sittings. January and February, 1864;

* By the term "medium," I imply (as elsewhere stated) a stone which measures about an inch in diameter in the lithotrite. The terms "small" and "large," denote stones relatively much smaller and larger than this standard.

seen by Mr. Clover, who gave him chloroform at the patient's special request at first sitting, but was not repeated. Success perfect.

Case 2. A gentleman, aged sixty-nine. Two uric-acid stones of considerable size. Eighteen sittings. Spring, 1864. A patient of Mr. Gayland, of Devonshire-street, who was present on every occasion. Success perfect.

Case 3. A gentleman, aged forty-five. Uric-acid and urates, full medium size. Eight sittings. Spring, 1864. Dr. Koepl, of Brussels, who was then in town, was present at two sittings. Success perfect.

Case 4. A gentleman, aged forty-six. Oxalate of lime; small medium size. Five sittings. Spring, 1864. Dr. Pancoast, of Philadelphia, then in town, was present at one or two of the sittings. Success perfect.

Case 5. A gentleman, aged seventy-six. A smallish phosphatic stone. Five sittings. April and May, 1864. This case was seen by Dr. Jenner two or three times. Success perfect.

Case 6. A gentleman, aged forty-eight. A medium-sized uric-acid stone. Six sittings. Mr. Hilton was present at one sitting. Success perfect.

Case 7. A gentleman, aged seventy. Large mixed calculus. Eleven sittings. Summer, 1864. Seen two or three times by Mr. M. B. Hill. All symptoms of stone disappeared. Some trouble remains with pre-existing enlarged prostate; but he rides, drives, and is actively employed.

Case 8. A gentleman, aged sixty-eight. A rather small calculus, mixed. Five sittings. Summer, 1864. M. Harris, of Gower-street, was present at every sitting. Success perfect.

Case 9. A gentleman, aged forty-eight. A rather large uric-acid stone. Eleven sittings. Summer, 1864. Mr. Hilton was present two or three times. Success perfect.

Case 10. A gentleman, aged sixty-nine. Small uric-acid stone. Five sittings. Dr. Koepl was present at the first. The symptoms disappeared, and he returned home. A fortnight afterwards the patient called on me to complain of a little return of pain. I advised waiting a week or two before sounding. This was at the beginning of June. At the end of the month he had severe rigors and fever, no instruments having been used. He gradually sank in the middle of July. At the autopsy, a calculus, the size of a bean, and smaller ones, were found in the right kidney; in the left was a large abscess. In the bladder there were four calculi, like those in the kidney, which had probably recently descended. The operation was

incapable of removing the graver part of the malady—viz., that of the kidneys.

Case 11. A gentleman, aged sixty-nine. Large uric-acid stone. Ten sittings. Summer, 1864. Mr. M. B. Hill saw this patient frequently; my friend Mr. Norman, of Southsea, also, on one occasion. Success perfect.

Case 12. A gentleman, aged sixty-two. Autumn, 1864. Small uric-acid stone. Three sittings. Mr. Hammerton was present each time. Success perfect.

Case 13. A gentleman, aged sixty-two. Autumn, 1864. Large calculus, uric-acid, and urates. Thirteen sittings. Dr. Harley was present at one sitting. Success perfect.

Case 14. A gentleman, aged forty-nine. Small uric-acid stone. One sitting. Mr. Clippingdale saw this case with me, in Nov., 1864. A subsequent severe illness, from which he slowly recovered; but he writes me now, that he has "no return of the old complaint."

Case 15. A man, aged fifty-nine; University College Hospital. Rather small uric-acid stone. Eight sittings. Nov. and Dec., 1864. The calculus could never be found or seized in any other way than with the blades of the lithotrite directed downwards immediately behind the prostate, however high the pelvis was raised. Discharged free from all symptoms.

Case 16. A boy, aged six; University College Hospital. Small uric-acid stone, the size of a small bean, crushed at one sitting. Discharged cured Dec., 1864.

Case 17. A gentleman, aged seventy-five. A rather small phosphatic stone, broken up and removed at one sitting in Dec., 1864. Mr. Tatham, of Brighton, was present. The patient had long passed no urine, except by catheter. This condition of course remains, minus the symptoms of stone.

Case 18. A gentleman aged fifty-seven. A small oxalate of lime calculus, crushed at one sitting in Nov., 1864. Mr. M. B. Hill was present. Successful as far as the removal of the stone is concerned. The patient is still subject to the formation of small calculi, which he has passed in great number.

Case 19. A gentleman, aged fifty-eight. A uric-acid stone of rather more than medium size. Five sittings. Dec., 1864. Mr. P. Jackson, and Mr. C. Jackson, of Wimpole-street were present at each sitting. Success perfect.

This list comprises eighteen adults, all relieved of stones, of which but a few were small. One patient only died, and certainly not as a direct result of lithotrity, but of renal disease and renal calculus, after having recovered from the primary

effects of the operation. Of these eighteen adults, the youngest was forty-five years old, the eldest seventy-five; the majority were above sixty-two years; four were seventy and upwards; and the average age of the whole number is also, as nearly as possible, sixty-two years. No one, I presume, will imagine that for these cases the operation of lithotomy would have afforded results in any way comparable; nevertheless, many of the stones were of considerable size.

I venture to add that, in my opinion, the success of lithotrity depends upon the method adopted. During a considerable period of the history of that operation, its results were undoubtedly inferior to the results of lithotomy in average hands; and if the same method be still employed, no better results can be expected. I propose to add a few remarks on what appears to me to constitute the safe and successful practice of lithotrity in the succeeding number.—*London Lancet.*

Editorial.

EDITORIAL CORRESPONDENCE.

BOSTON, June 6th, 1865.

PROF. E. ANDREWS:—*Dear Sir:*—Leaving home on the 18th ult., after a pleasant trip over the Pittsburg, Fort Wayne and Chicago, the Pennsylvania Central, and Northern Central Railroads, we arrived in Baltimore on Saturday morning, where we tarried until the Monday following.

The fields along our route were clothed in their richest green; the forests, in full foliage, were beautified with the white blossoms of the *Cornus Florida*, with here and there a wild rose, a geranium, or a modest violet.

To escape from the din of the city, the unceasing calls of the sick, and never-ending routine of professional life, and enjoy the fresh invigorating air of the country, while the eyes feasted on the hills and valleys, the waving grain, and unbroken forests, was a privilege such as none but the care-worn and toilsome inhabitant of a busy city knows how to appreciate.

After resting over the Sabbath in Baltimore, we proceeded,

on Monday morning, to Washington, where we expected to spend two or three days. But such was the throng, in anticipation of the great military reviews to take place on Tuesday and Wednesday, that we could not find a lodging in any kind of a hotel in the city. About noon, however, we obtained room in a private boarding-house, and hastened to the office of the Surgeon-General, for the purpose of gaining admission to the Army Medical Museum. We (myself and son) were very kindly received by Surgeon-General BARNES, who sent one of his assistants, immediately, to show us everything of interest in the Museum.

We found the collection neatly and conveniently arranged, though in a building too small for the number of specimens that are still rapidly increasing. I was particularly interested in a series of wet pathological specimens, showing the changes in the mucous membrane of the intestines, effected during the progress of camp diarrhœa, dysentery, and typhoid fever. The specimens exhibit traces of disease in almost every stage of progress, from simple redness or slight inflammatory action, to that of extensive ulceration and gangrene. The specimens of gunshot injuries are very numerous, and those of the larger joints intensely interesting. The results of exsections are presented in considerable numbers, and, so far as relates to the knee and other hinge joints, they certainly do not encourage this branch of conservative surgery. With the shoulder and hip it is different. In the collection, there are several skulls, showing only a very slight graze or contusion of a ball upon the exterior surface, while the inner table was fully and *comminutely* fractured. One of the most interesting and instructive features of this museum, is the photographic plates and illustrations, both life-size and microscopic. The specimens in the museum are all neatly mounted, labelled, and their histories, as far as possible, carefully preserved. We should think the work of the whole establishment was in good and faithful hands, and the profession have reason to expect much benefit from it in the future.

On Tuesday morning, all public places were closed, Pennsylvania Avenue thoroughly washed by the fire-engines, to prevent

dust, and the assembled thousands, from every part of the country, of all ages, colors, and sexes, began to gather in front of the Presidential mansion, and the streets leading to the Avenue, to witness the grand review of the old Army of the Potomac. Avoiding the thickest of the crowd, we (myself, wife and son) took our stand on Pennsylvania Avenue, near Capitol Hill, where, precisely at the appointed hour, we saw Major-General MEADE and full staff, as they swept around the Hill into the Avenue, and up towards the White House, followed by 75,000 cavalry, artillery, and infantry, with their martial music and banners, receiving the welcome shouts of the multitudes, and frequent presents of flowery wreaths from fair hands. The day was clear, the air pure and bracing, and we sat gazing with mingled emotions of awe and gratitude upon brigade after brigade of those war-worn and faithful defenders of their country, until the last man of that mighty column had passed, when, on noting the time, we found that it had been full five and a-half hours. The remainder of the day was spent in the Smithsonian Institute and around the public grounds.

The following morning, we again took up our position on Pennsylvania Avenue, to see the grand army made up of our Western boys make their hard-earned triumphal entry into the capital of the nation. Exactly at the moment specified in the general orders, the well-known form of Major-General W. T. SHERMAN was seen entering the Avenue at the foot of Capitol Hill, accompanied by his staff, all mounted on superb horses, closely followed by the body-guard and full band of music. Then came the dense column of veterans, twenty abreast, with bayonets glittering in the sun, their tattered colors flying, while the shouts of the hundreds of thousands of spectators were echoed and reëchoed from Capitol Hill to the White House. The enthusiasm and delight of the people, exhibited on Tuesday, was repeated and immensely increased as the noble army that had literally traversed the continent victoriously from Cairo to the Gulf, and from the Gulf to the Atlantic coast of the Carolinas, passed with firm and steady step, to pay their respects to the President and Lieutenant-General of the nation.

The grand and glorious spectacle of those two days has scarcely been equalled in the military history of the world.

To avoid the crowd which would certainly render all the evening railroad trains out of Washington uncomfortable, we hastened from the sublime spectacle in Pennsylvania Avenue to the 11 o'clock A.M. train for Philadelphia, where we arrived safely in the evening. While in Philadelphia, I visited the Meuter Museum, where I found an excellent building, sufficient to accommodate a good pathological and anatomical museum, a good library, and a pleasant lecture-room. It is under the management of the College of Physicians and Surgeons of Philadelphia. In the library-rooms there is a pretty extensive and valuable collection of medical books, some of which are very ancient and rare. The articles in the museum, however, disappointed me both in number and quality. After visiting Laurel Hill, Girard College, and spending half-a-day profitably in the Museum or Hall of the Academy of Natural Sciences, in Philadelphia, we took our leave and started for New York, where we arrived on Saturday evening. Here, wishing chiefly to invigorate the physical system, and gratify the social feelings, we avoided scientific and professional matters as much as possible, and spent a week in trips to Staten Island, Coney Island, Central Park, &c., enlivened with the society of old friends.

As a meeting of the Academy of Medicine took place one evening during the week, we accepted an invitation to accompany one of its members. The subject for discussion was Pyæmia, on which an interesting paper had been read at a previous meeting, by Dr. KRACKOWITZER. A goodly number of members were in attendance, but they seemed to enter upon the discussion of the important subject before them with much reluctance. After considerable delay, the discussion was finally commenced by Dr. E. R. PEASELEE, and was continued by Drs. F. H. HAMILTON and B. F. BARKER. It was conceded by all the speakers, as well as by the paper of Dr. KRACKOWITZER, that the symptoms usually attributed to pyæmia are not produced by the absorption of *healthy* pus, but by some septic poison which may be developed by decomposition of pus, or, some-

times, without the presence of any perceptible suppurative action at all. Hence the name pyæmia was regarded as objectionable.

On Friday afternoon, we entered a steamer, bound for Providence. After a delightful trip through the East River, in full view of the islands containing the charitable and criminal institutions of the great commercial metropolis of the country, we entered the broader part of Long Island Sound, and the darkness of night shut the surrounding objects from view. On awakening from a good night's sleep, we were rapidly nearing Providence, where we passed directly into the rail-car, and arrived in Boston in time for an early breakfast. Here we find every preparation for a good meeting of the American Medical Association. And, as it is to be called to order at 10 o'clock A.M., I must close this letter. Yours truly, N. S. D.

—

American Medical Association.—The above letter, addressed to my colleague, Dr. Andrews, was intended to help fill up the editorial space in the June number of the Examiner. But my colleague had kindly filled the space, and had the whole number in type, before the letter was received.

The recent meeting of the Association at Boston, was one of the largest and most profitable that has ever been held. Over six hundred members were present. For earnestness in devotion to appropriate business; cordial friendship among members; and true social enjoyment, it may be said to have excelled all the previous meetings. The arrangements made by the local committee in Boston, were very judicious and liberal; the several sections were promptly organized, and commenced their work on the afternoon of the first day; and though the meetings of the Association were protracted to 1 o'clock P.M., of the fourth day, yet from the first to the last hour of the time, promptness, regularity, close attention, and perfect cordiality, characterized every step. The citizens and city authorities of Boston, were most liberal in their attentions to the Association. The local profession of Boston, the municipal authorities, and the Governor of the Commonwealth, are alike entitled to the

thanks of the whole profession, for their generous hospitality and judicious arrangements.—If there were any in the profession who imagined that the American Medical Association had lost its original vitality, and was doomed to a rapid decline, especially if *they* withheld *their* presence and influence, they cannot fail to see in the number, earnestness, and cordiality of the recent meeting in Boston, very clear evidence of their mistake. On the contrary, we think its career of usefulness and real activity has only just begun.

Surgeon-General Barnes and Homœopathy.—In a recent number of the *Medical and Surgical Reporter*, of Philadelphia, it was stated that at the recent meeting of the American Medical Association, resolutions were introduced censuring Surgeon-General Barnes, for having consulted with a homœopathic practitioner in the case of Secretary Seward, in Washington; and that after proper explanations they were withdrawn.

This is a mistake. No resolutions were introduced on the subject, and, of course, none were withdrawn. During the progress of the late meeting at Boston, a letter was received from Dr. W. H. Mussey, of Cincinnati, one of the Vice-Presidents of the Association, explaining that his absence from the meeting was on account of sickness in his family; and, incidentally, alluding to the alleged fact that the Surgeon-General of the U.S. A. had been in consultation with a homœopath in such a manner as to deserve severe censure. This letter, in accordance with the usual custom, was read to the meeting. That part of it relating to the Surgeon-General caused a representative from the Medical Department of the Army to rise and fully and *authoratatively* deny the truth of the allegations against that officer. This being entirely satisfactory to the Association, the subject was then dropped, as no formal question had been presented for the action of the meeting.

The New Dispensatory.—Physicians should observe that in the new Dispensatory the strength of many of the preparations is changed, a fact which needs to be carefully noticed in prescribing. In many respects the new preparations are superior to the old.

MORTALITY OF CHICAGO FOR MAY, 1865.—Furnished by the Assistant Health Officer, Matt. P. Riordan.

DISEASES.

Accident,	5	Bilious Fever,	5
Apoplexy,	1	Inflammation of Brain,	7
Burned,	1	Inflammation of Stomach,	1
Catarrh,	1	Inflammation of Bowels,	4
Congestion of Brain,	4	Inflammation of Lungs,	4
Congestion of Lungs,	2	Inflammation of Bladder,	1
Consumption,	32	Intemperance,	2
Croup,	17	Killed,	2
Cramps,	13	Lock Jaw,	1
Convulsions,	6	Measles,	2
Childbirth,	6	Marasmus,	1
Cancer of Stomach,	2	Old Age,	5
Cerebro-Spinal Meningitis,	4	Poisoned,	1
Congestive Chills,	2	Paralysis,	2
Dysentery,	2	Pneumonia,	2
Diphtheria,	2	Rheumatism,	2
Disease of the Heart,	3	Small-Pox,	5
Dropsy,	6	Stillborn,	8
Diarrhœa,	9	Strangulated Hernia,	1
Erysipelas,	3	Teething,	6
Nervous Fever,	2	Unknown,	6
Scarlet Fever,	8	Water on Brain,	5
Typhoid Fever,	6	Worms,	3
Brain Fever,	6		
Spotted Fever,	1	Total,	229
Puerpural Fever,	1		

AGES OF THE DECEASED. — Under 5 years, 91; over 5 and under 10 years, 19; over 10 and under 20, 12; over 20 and under 30, 34; over 30 and under 40, 22; over 40 and under 50, 12; over 50 and under 60, 14; over 60 and under 70, 7; over 70 and under 80, 3; over 80 and under 90, 1; over 90 and under 100, 3; stillborn, 8; unknown, 3. Total, 229.

NATIVITIES.

Chicago,	107	Scotland,	1	Illinois,	3
Canada,	4	Sweden,	1	Other States,	41
Colored,	1	France,	1	Unknown,	2
Belgium,	0	Germany,	24	Wales,	1
England,	6	Holland,	1		
Ireland,	35	Norway,	1	Total,	229

DIVISIONS OF THE CITY.

North,	48	South,	88	West,	93	Total,	229

SMALL-POX.

North,	1	South,	2	West,	2	Total,	5

Total number of deaths in May, 1864,	309	Small-Pox,	30
Total number of deaths in April, 1865,	256	Small-Pox,	4

ELECTRICAL ANÆSTHESIA.—In a short article in the Lombardy *Gazette Medica*, March 13, an account is given of a demonstration made by Dr. Rodolfi, at the Brescia Hospital, in

the presence of a large number of medical practitioners, of the power of the electrical current to induce local anæsthesia. This is complete enough to admit of the execution of painless surgical operations, although it does not appear that any such have as yet been performed; and it is remarkable in its extreme duration, three days been spoken of as a common period. It seems that women (especially when nervous or hysterical) are more susceptible of its action than men, and it fails to produce any anæsthetic action in about 6 per cent. of the individuals submitted to it. In a case of a woman acted upon before the witnesses, anæsthesia of the hands began to be induced ten minutes after the application of a continuous current from a Bunsen's pile with six elements; and another woman was exhibited in whom complete anæsthesia had affected the whole surface above the diaphragm for three days. An hysterical subject manifested general anæsthesia, with paresis of movement of the limbs, and submitted to have her tongue traversed with a needle. In her case the anæsthesia continued from ten to fifteen days, gradually diminishing. The intellectual faculties continue in these cases quite undisturbed. In one of the cases experimented upon anæsthesia could not be induced, which Dr. Rodolfi attributes to the aversion the patient felt to the presence of so large a number of spectators.—*Medical Times and Gazette.*

A Simple Ophthalmoscope.—[*From the British Medical Journal.*]—Sir:—I find that if a convex lens of about two inches focus be placed in close apposition with a concave one of about nine inches focus, and this combination be held before the patient's eye, at the distance the object-lens of an ordinary ophthalmoscope usually is, it forms an ophthalmoscope, uniting in itself the reflecting and refracting elements of that instrument. For, whilst the light from a flame is reflected by two surfaces (the outer concave surface of the concave lens and the internal concave surface of the convex one) into the patient's eye, it is also, on its emergence therefrom, refracted by the effective convex element of the combination, so as to form the usual indirect image of the fundus oculi at the focal length. With such a rough combination, I have been able to obtain a distinct image of the optic nerve, retinal vessels, etc.; and I may hence not unreasonably hope a properly constructed meniscus will in itself fulfil the conditions of the mirror and object-lens of an ordinary ophthalmoscope.

I am, etc., J. Z. LAURENCE.

30 Devonshire Street, Portland Place, May 3d, 1864.

HEADQUARTERS ARMY OF THE TENNESSEE,
MEDICAL INSPECTOR'S OFFICE,
Louisville, Kentucky, June 28th, 1865.

DOCTOR:—Will you please give notice, through the EXAMINER, that fifteen or twenty physicians are wanted in this army, to serve with the troops encamped about the city. They can be employed under contract, for at least three months, by applying in person at the Headquarters of the Army of the Tennessee, in Louisville, Ky.

Surgeons and assistant-surgeons, who have served in the field during the war, are anxious to return to their homes. Many have already left the service, making the demand for medical officers very great. Yours respectfully,

JNO. M. WOODWORTH,

PROF. N. S. DAVIS, *Chicago, Ill.* *Med. Insp. Army of the Tennessee.*

P.S. The monthly compensation for medical officers under contract in the field, is $113,83 per month, and furnished with horse and equipments. The medical officer furnishes his own instruments. WOODWORTH.

HEALTH OF THE PACIFIC COAST.—As far as our knowledge extends, the health of this coast, for the last six months, has been uncommonly good. Malarious fevers, generally of a mild type, have prevailed endemically, to a slight extent, and diphtheria has dropt like a deadly meteor on a few localities, and then vanished. The season was very wet in the beginning, and very dry subsequently, but no morbific influence appears to have attended the climatic irregularity.

TREATMENT OF HYDROCELE.—Dr. William Jollie (Gateshead-on-Tyne) recommends the following plan, which he has followed for some years, and invariably with success, even after failure with port wine, &c.:—

"I tap the hydrocele by trocar and canula in the usual way, draw off the fluid, and then introduce through the canula into the cavity of the tunica vaginalis a common surgeon's probe, which has been previously coated, for an inch of its length, with nitrate of silver. I prepare the probe by heating the extremity to a dull red heat in the flame of a gaslight, and placing it in

a little finely-powdered nitrate of silver, and then again subjecting the probe to the heat, so as to form a smooth coating to the instrument. If your correspondent, and other surgeons, will make use of this method, they will, I have no doubt, quickly, effectually, and cheaply relieve their patients of a troublesome complaint."

Will Oleum Tanaceti Cause Abortion.—This question was discussed at a late meeting of the Buffalo Medical Association, as reported in the *Buffalo Medical and Surgical Journal.* A woman who had used it died in consequence, and on inspection extensive peritonitis was exhibited, with purulent effusion. Other fatal cases were reported, and the general conclusion was that the agent had no specific effect on the uterus, and often destroyed life without producing abortion. The loss of the fœtus, when that takes place, was ascribed to the violence done to the organs generally by the poisonous drug.

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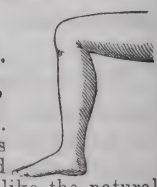

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DOUGLAS BLY, M.D., *U.S. Commissioner.*

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DR. MOTT ON ARTIFICIAL LEGS.

New York, February 10, 1860.

When the Palmer leg was invented. I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

First. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

Second. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

Third. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

Fourth. The springs are made of India-rubber, and imitate more closely the action of the muscles.

Fifth. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

THE

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N. S. DAVIS, M.D., EDITOR.

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REPORT ON ORTHOPEDIC SURGERY, FOR THE ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, HELD IN BLOOMINGTON, MAY 2D, 1865.

BY DAVID PRINCE, M.D., of Jacksonville, Ill.

[With 23 Illustrations.]

NOTE.—It is the aim of the following paper to discuss the subject of the nature and treatment of deformities to the extent of some degree of completeness, and yet as briefly as possible; and to simplify the processes so as to make them practicable with general practitioners of ordinary mechanical skill, who have no access to surgical instrument makers, and who must construct their own apparatus. Any detailed account of surgical operations is omitted, not because it would be irrelevant, but because it would extend the length of the paper too far. The subject of Talipes, having been fully discussed in the report of last year, is entirely omitted from the report of this year.

Definition.—ORTHOPEDICS, ORTHOPÆDIA, ORTHOPEDIC SURGERY—[From Gr. *orthos*, right, and *paidos*, a child.] The part of medicine whose object is to prevent and correct deformities in children. Used with a more extensive signification, to embrace the prevention and correction of deformities at all ages.

Prevention, in this, as in other branches of medicine, is far more important than correction, though usually less appreciated, because the extent of deformity obviated can only be estimated by those familiar with the subject. The impossibility of correcting many deformities, which by timely care might be prevented, adds still more to the necessity for a full account of the treatment of those diseases and injuries from which deformities result. The necessary limit of this paper has made a very full account of these lesions impracticable, but enough is said to

indicate their character, and the sources from which fuller information may be derived.

The efficacy of time, skill, and patience in correcting malformations, is not only far beyond our popular credence, but beyond the estimate of the majority of the medical profession, who have not acquainted themselves with the recent advances in the art. The length of time often required is sometimes a source of discouragement with those who do not reflect by what slow and insidious processes deformities are often produced. The popular idea that surgery is cutting and curing quickly, and the impatience of surgeons themselves, who share this estimate of the art, are impediments in the way of the accomplishment of that degree of success which the general practitioners in every community should be able to secure.

PART FIRST.

The following classifications, by systematizing the conceptions, may aid in securing a clearer appreciation of the origins of malformations or malpostures, and of the means appropriate to their prevention and correction:—

Classification of Deformities by their Causes.

I. Arrest redundancy or misplacement of development. *Congenital.*

II. Perversion of relations of parts through muscular contraction, generally owing to palsy of the nerves distributed to one set of muscles, or to irritation of those distributed to their antagonists. *Con or post-genital.*

III. *Inflammation*, injuring or destroying the tissues, perverting or nullifying muscular contraction, distorting and stiffening joints, and perverting, impairing, or abolishing the functional movements of the parts affected. *Generally post-genital.*

IV. *Accidents*, breaking, tearing, bruising, burning, or freezing the tissues, followed by the loss of the parts, or the failure, imperfection, or perversion of their union or restoration. *Generally post-genital.*

V. Mutilation of parts designedly done; or force or restraint artificially applied, like the compression of the feet of the female

children of Chinese grandees, or the heads of some Indian tribes, and, to a less degree, the feet and waists of genteelly educated children in modern American and European society. *Always post-genital.*

1. Arrest, redundancy, or misplacement of development. It is impracticable here to enter into a consideration of the varieties of congenital deformities, and only a few can be mentioned which admit of remedy. The most common of all these is hare-lip, which is an arrest of the process of union of the integument and other components of the upper lip to one side of the median line corresponding with the junction of the os maxillare with the os incissivum, which in man should become one bone, though they remain distinct in quadrupeds. The extension of the fissure between these two bones, and along the median line between the maxillary and palate bones, makes a fissure of the hard palate, and the still further extension through the soft palate, produces a cleft palate. The latter may exist alone while the lip and hard palate have their proper development. The union of opposite surfaces in the fissure of the lip is easily accomplished, that of the palate with more difficulty, while the union of the separated parts of the bony arch of the mouth has resisted the attempts of surgery, owing to the firmness of the bones of the face. Some diminution of the breadth of the fissure may have been secured by pressure upon the malar bones, and Dr. J. MASON WARREN, of Boston, has done something towards the closure of this opening by dissecting the tissues from the bony arch and causing them to *glide* backward to fill the posterior extremity of the fissure. [*See Am. Jour. Med. Sciences, Oct.*, 1863.] Various ingenious operators in dentistry have made admirable successes in closing the fissure of the hard palate by gold or hard rubber, but a more complete success has been achieved by NORMAN W. KINGSLEY, of New York, who has succeeded in closing the fissure in both the hard palate and the soft, with soft elastic rubber; and it is claimed that the expedient is quite as good as a closure of the soft palate by surgical operation. [*See Transactions Am. Medical Association*, 1864, *p.* 385.]

Hypospadias—an open state of the urethra from arrest of

development, admits of some improvement by plastic operations securing artificial union, but here, and elsewhere, the defects must be supplied out of material sufficiently like the original to fulfil its function.

Redundancy, as in supernumerary fingers and toes, usually admits of an easy remedy in amputation, which should be so practiced as to leave the parts as nearly in their natural condition as possible; a point requiring no little surgical skill. Redundancy, in the uniting process between adjoining parts, gives rise to web fingers and toes. With the latter, encased in a shoe, the deformity hardly amounts to an inconvenience, but in the fingers the abnormal union is both inconvenient and unsightly. The fingers may be dissected apart, but the deficiency of integument is apt to lead to a reunion by a gradual encroachment of the fork of the fingers, very much like the process after a burn of the same parts. The sacrifice of the bones of a finger for the use of its integument to apply to the adjoining fingers, renders the operation more promising.

The misplacement of development not only constitute a very numerous variety of congenital deformities, but the most of them admit of no amendment. One limb is grown upon or into another, making one member, with all imaginable varieties; sometimes presenting the whole ten toes and fingers; there are sometimes two heads with one body, or two bodies, with their limbs, sustaining one head, or two distinct beings are united by more or less extensive connections. These rarely admit of any remedy.

A variety of misplacements occurs at a later period of development, depending upon mechanical restraints external to the fœtus. There is the greatest probability that solidifying exudations from the interior of the amniotic membrane may, for a variable period, take the place of the ordinary fluid secretion. Bands formed of this material may, in some cases, produce amputation; in others, fissures, in some instances dividing muscles, leaving the parts to be united by tendinous connections, and in other instances producing various malpostures of the limbs, among which may be some varieties of talipes. In many of these cases, properly applied force, after birth, may remove

the malposition, while fissures may be obliterated by surgical operations.

2. Perversion of relations of parts through muscular contraction, generally owing to palsy of the nerves distributed to one set of muscles, or to imitation of those distributed to their antagonists.

The admission of the existence of the same kind of deficiencies, or perversions of the nervous function in intra and extra-uterine life, throws much light upon many congenital deformities. While talipes probably often owes its existence to some constraint, analogy leads us oftener to entertain the theory of irregular muscular action, through disease of the nervous system. The frequency of hydrocephalus during intra-uterine growth, shows that the fœtus is liable to the same perversions of nutrition which in childhood produce the same pathological results. For illustration, a contraction of the little finger most, and of the other fingers less, while the fontanelle is seen to be depressed, is sometimes observed as a symptom of the incipiency of those cerebral lesions in insufficiently nourished children, which, when unchecked, end in convulsions and death. A prolongation of this incipient state, previous to birth, or subsequent to it, might easily be supposed to produce such a preponderance of the flexors over the extensors as to require artificial aid to secure restoration.

A change of the state of nutrition by proper alvine evacuants, and an increase or alteration of the nutriment may, in children, remove the cerebral irritation, and relieve the local tonic spasm before the affected muscles become permanently shortened. On the other hand, an inflammatory excitement may have an equally abortive, protracted, or fatal course, with equally varied effects upon muscular contraction. Sometimes these lesions of the nervous system are so local as not apparently to pervert the general health, and yet the proper general treatment often removes the irritation and corrects the abnormal muscular contraction. In children, the progress of these cases can be observed, but in the fœtus the nature of the lesion can be known only by the result.

The interest and importance of this subject justify its consideration to a greater extent. Its correct understanding is necessary to the adoption of such therapeutics as will *prevent* deformity or loss of function, which is far better than the greatest success in restoring them. Any discussion on the subject of orthopedia which should omit this, would be defective in one of the most important points. A correct theory of the nervous irritation has two practical ends—first, to subdue or ameliorate the original nervous disorder; and, second, to preserve the functions of the parts receiving the perverted nervous stimulus so that when the original disease passes by, the local parts shall not have become irredeemably useless by loss of nutrition, or the assumption of malpostures, or both combined.

Great light is thrown upon this subject by the hypothesis, pretty well sustained, that there may be a constant muscular pull in addition to the ordinary muscular tonicity, and independent of, and sometimes in spite of, and in antagonism to voluntary contraction and ordinary reflex action. This constant abnormal contraction results in shortening, rigidity, and ultimate wasting of the muscles affected, reducing them to the condition and function of ligaments—in the language of BARWELL, the condition of *contracture*.

This is something more difficult to control than mere palsy or loss of action of certain muscles, leaving their antagonists to distort the parts affected by a mere excess of tonic and voluntary power. One of the best and most recent surgical writers in the English language has, however, thrown doubt over this hypothesis, or been disposed greatly to narrow its field. We quote from *Barwell on Club-Foot, p.* 19. (Churchill, London, 1863.) "Infants are frequently, as is well-known, subject to convulsions, and it is averred that sometimes one or more which have, during the attack, drawn the limb into malposture, do not recover from the contraction, but continue to keep the limb distorted. Such a muscular condition would not be a *contracture*, as I have described it, since the convulsion never lasts sufficiently long for any such organic process of areolar shortening; the state would be one of persistent, unvarying spasm,

powerful enough to overcome the antagonistic healthy muscles, and permanent enough to produce lasting change of form. Such condition does not only never come under our notice, but is, I believe, pathologically impossible. There are, no doubt, a few cases of paralysis of voluntary power over the muscles, while the excito-motory function continues, and in the spasm of the whole set, the strongest will, of course, predominate. Voluntary power is as much used to control as to excite. The paralysis of this power is evidenced as much by violent and uncontrollable spasm, as by insusceptibility of subordinate movement."

The hypothesis in question is in perfect accordance with the last part of this quotation—maintaining that in addition to the excito-motory function, there is another which does not tire during the continuance of the irritation, but constrains the muscles affected to draw continually, while the capillaries are so squeezed as to receive an inadequate supply of blood, resulting in rapid wasting of the muscular substance, from want of nutrition. In illustration of this subject, the following quotations are from Dr. R. B. TODD'S account of paralysis with rigidity. (*Todd on the Nervous System. Lindsay & Blackiston's Edition.* 1855. *Page* 153.)

After speaking of paralysis, with relaxed muscles, he says:—"I mentioned that the second kind of hemiplegia is where the muscles of the paralyzed limbs are rigid, and where the rigidity comes on simultaneously with the paralysis, or very soon after it. You must bear in mind that a distinctive feature of this hemiplegia is the early period at which the muscles assume this rigid condition. This is the more important, inasmuch as we meet with another form of hemiplegia with rigid muscles, in which the stiffness gradually supervenes a long time after the paralytic seizure, and may succeed to the relaxed condition of the paralyzed muscles."

Page 155. "The condition of slight and partial rigidity of paralyzed muscles is that of most frequent occurrence in hemiplegia caused by an apoplectic clot. My idea as to its cause, is that it depends upon a state of irritation, propagated from

torn brain to the point of implantation of the nerves of the affected muscles. But you will ask, Why is it that, in some cases of clot, the hemiplegia will be accompanied with complete relaxation of muscles, while in other cases the rigidity of which I have spoken exists? The answer to this question is as follows:—In the cases where there is no rigidity, the clot lies in the midst of softened brain, and has not in any degree encroached upon sound brain, but when rigidity exists, the clot has extended beyond the bounds of the white softening, and has torn up, to a greater or less extent, sound brain."

Page 158. "A much more interesting form of the second kind of hemiplegia, is that in which there is considerable rigidity of all the muscles of the arm and forearm, where the arm is kept at an angle with the trunk (and sometimes these patients hold it across the chest), the forearm being flexed on the arm, and the fingers flexed on the palm. In these cases the paralyzed muscles seem to be firm and contracted, and sometimes almost in a tetanic state, and offer considerable resistance to flexion or extension, which frequently also excites a good deal of pain. When the rigidity is of this nature, the paralysis is generally not complete, a certain degree of power remaining of moving the whole limb, or some part of it, and very frequently sensibility is affected, being sometimes obtuse, but oftener in an excited condition, while it not uncommonly happens that reflex actions are also considerably exalted. In the latter cases, you will find the reflex actions produce a considerable pain."

Page 159. "When hemiplegia, with a rigid state of the muscles, supervenes soon, on some injury of the head, you may almost always make a certain diagnosis that it is the result of irritant compression of the opposite hemisphere, by depressed bone or hemorrhage, outside or inside of the dura mater."

Page 160. "It (paralysis with rigidity) is due to a cause which exercises, at once, a paralyzing and irritating influence on the brain, and this influence is propagated to the spinal cord, and through the nerves implanted in that portion of the nervous centre, to the muscles of the paralyzed limbs, in which it excites a state of contraction. The effect is analogous to that

produced by the continued action of the electro-galvanic machine, and just as a rapid succession of electric shocks may keep up this rigid condition of muscles, so may continuous shocks of nervous force, due to irritative pressure, bring about a similar result."

Page 178. "I think it must be admitted that the rigid state of the muscles is due, primarily, to an irritated or excited state of the nerves, and, that on the cessation of that irritation, the muscles might resume their relaxed condition, or that a similar result would follow a severance of all connection between the muscles and the seat of the cerebral lesion, by section of the nerves. It seems to me, however, that after a long continuance of this rigid and shortened state, the muscles would become permanently shortened, and would assume a condition similar to that into which anchylosed joints are apt to fall—a condition from which they would recover very slowly or not at all."

These detached quotations necessarily appear dogmatic, and for the facts and reasons through which the conclusions are arrived at the reader is referred to the book from which they are taken.

BROWN-SEQUARD goes a step farther, and claims that this permanent contraction may occur, not only from irritation at the origins of the nerves in the encephalon, but that it may occur from irritation of the appropriate nerves in their course from centre to circumference. He is of opinion that there are nerve-fibres going from the brain to the muscles, the irritation of which produces tonic or permanent contraction of the muscles to which these nerves go, and that these nerve-fibres pass down in portions of the cord different from those through which the voluntary nerve-fibres pass. A few quotations are here introduced from the valuable work of this author. (*The Physiology and Pathology of the Nervous Centres, p.* 194.)

"The division of these nerve-fibres is not followed by paralysis, although they are able to act on muscles to produce contractions, and even more powerful than those caused by nerve-fibres employed by the will in voluntary movements."

"It is a fact worthy of attention, that a puncture with a

needle through the anterior pyramids which contain very nearly all, if not all, the nerve-fibres employed in voluntary movements, will hardly produce a momentary contraction in some muscles, while certain punctures through the olivary column of the medulla oblongata at once produce a spasm of many muscles, although this column does not contain more than very few voluntary motor-fibres, if any at all; and now, to add to the strangeness of the fact in this last case, the muscles remain contracted for hours, sometimes for days and weeks."

"We have all been taught that after the removal of a cause of excitation in the nervous centres, as well as in the nerves, the effects of the excitation disappear, until inflammation supervenes and produces a permanent excitation; while here, however, we see a puncture with a needle, or a section with a knife, before any inflammation can have begun, followed by a persistent effect. There is, therefore, in some parts of the nervous centres, a property of acting in a persistent manner to produce muscular spasms during, and after a mechanical excitation.

Page 196. "The parts of the base of the encephalon which are capable of producing persistent spasms, seem to be quite different from those employed in the transmission of sensitive impressions, or of the orders of the will to the muscles, at least in the medulla oblongata and pons Varolii. They constitute a very large portion of these two organs, and perhaps three-fourths of the first one. They are placed chiefly in the lateral and posterior columns of these organs; many of their fibres do not decussate and produce spasms on the corresponding side of the body; they seem to contain most of the vasomotor nerves, by which, directly or through a reflex action, they may act on other parts of the nervous system. They have much to do with the phenomena of several, if not most of the convulsive diseases. Lastly, I will say that the history of their properties and actions throws a great deal of light upon the effects of disease or extirpation of the cerebellum."

Page 207. "There are a great many nerve-fibres and nerve-cells in the medulla oblongata, the pons Varolii, and other parts of the base of the encephalon, which are not employed in the

transmission of sensitive impressions, or of the orders of the will to the muscles, and are endowed with the singular property of producing, even after a slight irritation, a persistent spasm in certain muscles, and especially in the neck."

Accompanying this rigidity of muscles from permanent spasm, there is supposed by this physiologist to be a similar excitement of the nerves going to the bloodvessels of the same muscles, by which the smooth muscular tissue of their walls is made inordinately to contract, depriving the affected muscles of an adequate supply of blood, and producing a rapid atrophy, while a similar irritation going to the voluntary muscles, secures their continued rigidity. It has been a mystery, how muscles could be actively contracting and yet rapidly wasting, and the hypothesis of BROWN-SEQUARD affords a plausible explanation of this feature. He further says, *p.* 163:—"That the paralysis of atrophied muscles is not the only cause of atrophy, is shown by the fact that this state (paralysis) of the muscles has often existed without paralysis, or at least before paralysis, and, sometimes, although there were convulsions in the muscles. NOTTA mentions three cases in which there were constant or frequent convulsions while atrophy was progressing."

Dr. BROWN-SEQUARD holds the theory that the paralysis of the voluntary muscles may, in some cases, be itself produced by irritant contraction of the muscular substance of the capillaries supplying with blood the origins in the brain or spinal cord of the nerves implicated. Dr. S. WEIR MITCHEL, of Philadelphia, objects to this, that this explanation cannot be true, because the spasmodic contraction of the capillaries must relax. If it is admitted, however, that there may be permanent spasm of the voluntary muscles, it is not difficult to conceive the existence of such a state of muscles that are involuntary.

Dr. MITCHEL'S views are explained, at considerable length, in the *American Medical Times*, *July* 9, 1864, and in the *American Journal of Medical Sciences*, *Jan.*, 1865, *p.* 161.

Dr. BROWN-SEQUARD'S theory finds further support in the fact that in paralysis with a flaccid condition, atrophy can, to a considerable degree, be obviated by passive motion, and in this connection the following quotation has great interest:—

Page 177. "Most of the morbid changes which have been attributed to paralysis do not belong to it, but are the result of irritation, either upon the nervous centres or upon the nerves, and the effects which are truly the consequences of paralysis, are due only in an indirect way to the absence of nervous action. Atrophy of muscles is chiefly due to a state of rest; changes of nutrition are chiefly due to dilatation of blood-vessels; ulceration upon the toes of animals, in which the nerves of limbs have been divided, only show the effects of rubbing the same parts upon the floor; ulceration and inflammation of the eye, after section of the trigeminal nerve, are chiefly due to physical causes (the drying of the cornea and conjunctiva, the prolonged action of light, &c.) All these may be, and have been, sometimes avoided.

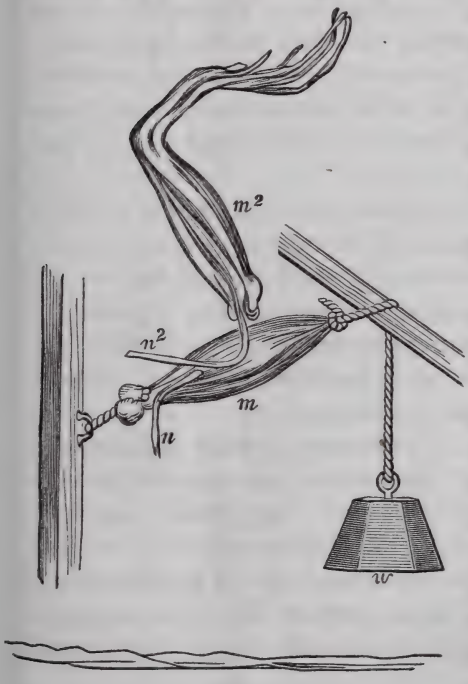
"On the other hand, if we try to find out what is the power of cicatrization and repair, in cases of paralysis not complicated with irritation of nerves, we ascertain, as has long ago been done by Sir BENJAMIN BRODIE, and as we have done since, and in varying more the mode of experimenting, that wounds, burns, and fractures may be cured as quickly in paralyzed parts as in others. If the influence of the nervous system is indirectly necessary to nutrition and secretion, it is nevertheless, true that all the phenomena of nutrition and secretion may remain normal, when the action of the nervous system on the various tissues is missing."

The irritations which give rise to palsy of voluntary muscular action, with the rigidity from irritative action of the involuntary nerves going to the same muscles, need not arise from irritating causes seated permanently at the origins of the nerves affected, but may be reflected from some peripheral seat of irritation. This affords not only ground of hope for relief, but a hint at the expedients of treatment.

Treatment.—BROWN-SEQUARD thinks from his own experiments, and those of MATTEUCCI, that certain contractions of muscles, from irritations derived through the nerves from their centres, there is the condition of cramp. It is found that in contractions of this nature, the pain is increased by the elonga-

tion of muscles, and entirely relieved by their complete relaxation, either by the approximation of their attachments, or by tenotomy. He says, (*loco citato, p.* 8):—"Now, I have found that the greater is the resistance to the contraction of a muscle, the greater is the galvanic excitation that it gives to the nerves in contact with its tissue. On the contrary, if there is no resistance at all, as shown by Prof. MATTEUCCI, after the section of the tendon, the galvanic excitation of nerves in contact with the contracting muscle no longer exists. It is not necessary for a muscle to contract in order to produce in nerves in contact with it a galvanic excitation. It is sufficient that it tends to contract."

One of the experiments referred to, consists in preparing a leg of a frog, with its sciatic nerve laying upon the muscles of another limb. The latter muscles are galvanized, and the first muscles are excited through the sciatic nerve. It is found that when there is no resistance to the contraction of the latter muscles, there is no galvanic excitation—no motion of the first muscles.



(Fig. 1.)

Fig. 1. From BROWN-SEQUARD.

m A muscle made tense by the attachment of a weight *w*.

m^2 Another muscle with nerve *n* lying upon the first muscle. When the muscle *m* tends to contract under the stimulus of galvanism, being restrained from movement by the weight *w*, the muscle m^2 contracts by galvanic excitation

acting through its nerve n^2 which is distributed to the muscle m^2 of the other limb.

It follows that in cases of pain, in consequence of the contraction of muscles, as in cramps and rigidity, the division of the tendons of the muscles obviates the pain, by rendering null the galvanic excitation. This physiological explanation is also applied to explain the relief afforded by division of the sphincter in *fissura in ano*.

If the irritation causing the contraction were a permanent element, there would be little good obtained by dividing tendons; for with the accommodation of the muscular fibres to their shortened relations as the ends become again fixed, the painful contraction would be reproduced. It is only when the irritation derived through the nerves is to some extent temporary that permanent relief should be expected from this expedient.

In case of anal fissure, the ulcer may itself be the cause, by reflex action, of the painful contraction of the muscle. If the division of the muscle permits the ulcer to heal, the cause of painful reflex contraction is removed; and after the restoration by granulating cicatrization, of the connexion between the divided portions of the sphincter, the muscle again quietly performs its function.

The rational of treatment, here explained, throws a clearer light upon the benefits claimed by GUERIN and others, from the division of muscles in distortions of the body and limbs with a condition of the contracting muscles resembling a permanent spasm. This explanation may also lead to a clearer distinction between those cases which can be benefited by division of muscles and tendons and those which cannot.

In those disproportionately contracting muscles which escape the wasting process a true hypertrophy occurs, and this continues after the irritating cause has disappeared. In these cases the division of muscles and tendons must hold out less promise; for in a short time the wound must be cicatrized, and the intervening material must contract like cicatricial substance elsewhere, restoring the muscle to its original length and power.

Another plan of treatment may here be applied—that of extension, to the extent of exhausting and gradually lengthening the shortened muscle.

In considering the philosophy of the influence of extension in producing the elongation of muscles, the analogy of the paralysing effect of our distension of the muscular fibres of the uterus and of the bladder is in point. As long as the increased length of muscular fibres is maintained they manifest very little power of contraction. But the partial evacuation of the contents by the rupture of the membranes, and the escape of the amniotic fluid, or, in retention of urine, the free flow of the urine through a catheter, restores the muscular fibres to the conditions of activity, and they proceed in a little time to discharge their proper functions, or if maintained by a definite increased length they soon accommodate themselves to the new conditions, and acquire the capability of contraction and relaxation in the increased distance.

It is obvious then, that in the treatment of deformities resulting from the contraction of muscles, the conditions of the muscular fibres of an over-distended uterus or bladder may be advantageously produced by artificial means. When the fibres have been drawn out, or induced to grow out of the desired length, the diminution of extension permits the muscular fibres to assume the capabilities of the elongated muscles sometime after a dislocation. It is obvious, from these considerations, that while a very moderate force would only increase the power of the fibres in a given length, a greater degree of force would increase the length with temporary diminution of power. On the other hand, the extension of the shortening or shortened muscles diminishes the acting length of the yielding antagonist muscles, and permits them quickly to acquire increased power. It is not necessary that they should acquire the same power as their overgrown antagonists, for we know that flexors and extensors are rarely balanced; and if it were the nature of the stronger muscles to overbalance the weaker what grotesque shapes should we all very speedily assume.

It is not the true indication permanently to weaken the short-

ened or hypertrophied muscles, but to accustom them to normal positions and limitations of contraction; automatic and voluntary nervous action must be relied upon to control the tendency of unequal powers of unequal muscles to produce distortion by the tonicity of health. Until this habit is complete and lasting, the artificial restraint to the strong and support to the weak must be employed. It is from the premature discontinuance of the mechanical appliances to this end, that disappointment is too often due. In many cases it is necessary to resist, not only the tonicity of health, but the tendency to rigidity arising from nervous irritation; and, while this tendency lasts, the mechanical appliances must be worn. To obviate deformity is both wiser and more easy than removing it, when it has once occurred.

For paralysis of muscles without tendency to rigidity, on obvious principle of treatment, is to secure such artificial movements as may most nearly imitate the natural. By this means the circulation through the capillaries is kept free and nutrition may go on; bones unite and wounds and burns heal in parts destitute of both motion and sensation if only by motionlessness the capillary circulation does not fail.

Where the cause of the paralysis is temporary the great labor necessary to secure this artificial activity may meet its full reward in ultimate restoration of the power. It is not general exercise that is here so much needed but "localized movements," which must be performed by a third person, or by some kind of mechanism, a good idea of which will be obtained by reading Dr. C. F. Taylor's *Movement Cure.*

Electricity.—There never was greater discrepancy of opinion among practical men upon any subject, than exists among physicians upon the use of electricity in deteriorations of muscles, or perversions of their functions. It is suspected that this has grown out of the want of proper distinctions.

In proof of the power of electricity to preserve the volume of paralyzed muscles, nothing can be more conclusive than the experiment of Dr. John Reid, which I quote from *Althaus on Medical Electricity, p.* 143.

"Dr. REID cut the spinal nerves in the lower parts of the spinal canal in four frogs, so that both hinder extremities were insulated from their connection with the spinal cord. He then daily exercised the muscles of one of the paralyzed limbs, by a weak galvanic current, while the muscles of the other limb were allowed to remain quiet. This was continued for two months, and at the end of that time, the muscles of the galvanized limb retained their size and firmness, and contracted vigorously, while those of the quiescent limb had shrunk to at least one-half their former bulk, and presented a marked contrast with those of the galvanized limb."

The form of electricity employed for the purpose of preventing muscular atrophy, or stimulating muscular development, when they are deprived of their appropriate nervous stimulus, is the interrupted current of an *induction* apparatus, either deriving its electricity from the decomposition of metals, as the ordinary galvanic battery, or from the magnet, as in the magneto-electric machines. The continuous current is found to have no power in producing contraction of voluntary muscles, though a slight contractile effort is produced upon smooth muscular substance, though these latter respond more readily to the interrupted than to the continuous current. In the language of *Althaus, p.* 177:—"The contractions are observed, not only at the commencement and the cessation of the current, as is the case with the voluntary muscles, but also while the circuit remains closed. * * * The movements induced in the muscular fibre cells by galvanism, are not observed simultaneously with the application of the electric stimulus, as with voluntary muscles, but only a certain time after the current has acted upon the tissue. * * * Besides, the motion once excited in the fibre cells, continues a certain time after the cessation of the current, and is not confined to those parts to which the electric current has been directly applied, as is the case with the voluntary muscles, but is propagated to other parts of the same tract."

It is found that a continuous current of electricity, as well as an interrupted current, secures in the now striped or smooth

muscular fibres of the vessels, a contraction which lasts a considerable time after the cessation of the current. The effect is to contract the bloodvessels which come in the course of the current, diminishing the amount of blood which they contain, and, consequently, diminishing the temperature.

Upon the voluntary or striped muscles, however, the contraction is immediate upon the beginning or cessation of the current, and ceases immediately and until a new excitation by the beginning or cessation of a current. It follows, that the application of electricity to a muscle produces two effects antagonistic to each other. First, a contraction, followed immediately by a relaxation of the muscular fibres, by which blood is invited to the tissues, partly by the change of volume increasing and diminishing in alternation, and partly by the chemical change of the elements of the tissues, under the physiological action of the muscle. By this increase of blood, the temperature rises, and the nutrition and volume of the muscle are maintained. Secondly, owing to the tendency of the vessels at the same time to contract, a certain intensity is given to the rapidity of the flow of blood, which resembles that imparted by the presence of moderate cold. The continuous current acts very slightly upon voluntary muscles, but quite considerably upon smooth muscular fibres, which give contractility to the walls of the vessels. Therefore, the interrupted current should always be employed to secure a better nutrition of voluntary muscles.

In the state in which there is a rigidity or tonic contraction of the muscles, owing to irritation of nervous centres, the application of electricity would seem to be an expedient of doubtful propriety, unless applied in shocks of such power as to impair or destroy the irritability of the muscular fibres, and thus occasion such a relaxation as may permit a free flow of blood.

In the paralysis with relaxation, the current should be of moderate intensity, and interrupted, to secure movements, and the consequent circulation which movements induce, while in paralysis with rigidity, the current should be of overpowering intensity, and also interrupted, to paralyze the motor nerves which secure the rigidity in the voluntary muscles, and also to

impair the contraction of the smooth fibres of the vessels getting their supply of nerves from the sympathetic, so that blood may flow more freely through the capillaries. By this plan of applying electricity, a relaxation of the striped fibres is secured at the same time that the capillaries are relaxed and enlarged, and, for the time being, a better circulation is secured through the rigid muscles, and an arrest or retardation of the wasting of muscular substance is realized.

In the paralysis with relaxation, without diminution of temperature, there would be theoretic reasons for employing both continued and interrupted currents of moderate intensity. The interrupted to exercise the muscles, and the continued current to give tonicity to the capillary circulation, by the tonic effect of a continuous current upon smooth muscular fibres. In all this, the chief object is to preserve the muscles from deterioration, and prevent or remove deformity, while by other means, or by the processes of Nature, the central cause of palsy may be removed, whether existing in the course of the nerves injured or diseased, or in the injured or diseased spinal cord or brain.

BROWN-SEQUARD'S theory of the action of electricity applied to muscles affected with permanent contraction is, that when applied in powerful shocks to the affected muscles, it exhausts the irritability of the muscular fibres, relieving them from the hold which the irritated nerves have upon them, and permitting them thus to relax at the same time that the smooth muscular fibres of the bloodvessels are relaxed in the same way, permitting a larger volume of blood to flow through the organs, and keeping up their nutrition until the spasmodic influences coming from the nervous centres can have time to disappear, by the restoration of the healthy functions of these centres, or by the removal of external or centripetal irritations which produce their effects by reflex action.

BROWN-SEQUARD makes alternation of heat and cold, with the same theoretic explanation, in those conditions of parts in which sloughing occurs, especially upon the sacrum, in diseases and injuries of the spine, and in some forms of low fever. He explains that there is something more than inaction and pres-

sure; that there is a contraction of the capillaries, which become relaxed by powerful interrupted electric currents, so that the usual amount of blood may again flow to preserve the nutrition of the parts and save them from sloughing.

Very much on the same principle, such parts are sponged with hot and cold water in rapid succession, the irritability of the muscular fibre cells of the capillaries being supposed to be exhausted by the alternation, continued for a considerable time.

3. *Inflammation*, injuring or destroying the tissues, perverting or nullifying muscular contraction, distorting and stiffening joints, and perverting, impairing, or abolishing the funtional movements of the parts affected.

Whether the inflammatory diseases which produce these results arise from wounds or injuries of the joints, or occur as the localizing of some more or less permanent constitutional condition, the indications for treatment, and the ultimate results are very similar.

The inflammations from accidents are, usually, at first synovial, attended in the beginning by excessive and thinned secretion of synovia, and afterwards by suppuration imposing upon the nervous and vascular systems violent perturbations, and involving, very soon, the surrounding tissues in inflammation, with softening and ulceration of the non-vascular articular cartilages. The processes are liable to be more rapid than is usual with spontaneous diseases of the same parts, and the cessation of diseased action, and the establishment of the permanently altered conditions earlier secured. Where, by appropriate treatment, the inflammation is aborted, before these grave results accrue, the course of the disease may be reduced to a very short period.

Spontaneous synovitis may be of two kinds—rheumatic and strumous—each more or less simple or complicated with inflammation of surrounding tissues; the former, the more painful and variable in severity, with exudations of solidifying material, which may afterwards seriously diminish the mobility of the joint affected, in consequence of roughness of surfaces, adhesions, the production of movable bodies, and the diminished

flexibility of surrounding parts, the articular cartilages in some cases ulcerating, or after fatty degeneration, becoming disintegrated under the friction of the opposed cartilaginous surfaces, until the rough bony surfaces are brought into contact, to end ultimately in eburnation with surfaces polished by friction, or in anchylosis, or in such constitutional irritation as to require exsection or amputation. Where several joints are simultaneously attacked with the most acute form of this inflammation, the patient's life may be destroyed very suddenly, by the depressing influence of nervous shock.

The strumous variety of synovitis may have all grades of severity and destructiveness, and be at first, accordingly, painless or more or less painful. The easy expansibility of the synovial membrane saves it from painfulness when the changes of volume are very slow, and the involvement of the articular cartilages in destructive processes can hardly add to the pain as they are destitute of nerves, and must, therefore, be destitute of sensibility.

Whether we accept the anatomy of the synovial membrane as a tube terminating at the articular cartilage, or as closed sacks, there is no practical difference, for if the articular surface has a synovial covering, it is destitute of vessels and nerves like the cartilage beneath. This is the reason why a slow inflammation, involving destruction of parts to a frightful extent, may occasion very little pain, as long as the bony tissue escapes the inflammatory process.

Inflammation commencing in the spongy heads of the bones, must be supposed to be attended with more pain and lameness, in consequence of the free supply of nerves which are exquisitely sensitive in the inflamed state. So slow is the process in some cases, that the nerves accommodate themselves to the slowly changing volume, so as to be surprisingly free from painful sensations. From this it follows that, in a great number of cases, the diagnosis must be exceedingly obscure as to whether the soft parts or the bones have been originally attacked. It is fortunate that this distinction is of no practical importance, as the treatment of one location of disease is

equally appropriate to the other. This distinction, however, may be considered clear, that when, in the course of a joint inflammation, there comes a great aggravation of painfulness, with spasmodic muscular contractions, especially aggravated by motion of the joint, or pressure of its articular surfaces against each other, the bony tissue has become involved in inflammation, and, perhaps, uncovered by the disintegration of its inverting cartilage, so as to expose its rough surface to friction.

After the subsidence of the acute symptoms in strumous synovitis, and in the earlier stages, in cases in which the initiation of the disease is by slow and doubtful steps, the pain is of the character of *aching*, increased by the dependent position. Perversions of sensation sometimes exist, as of cold or heat, when there is really no change of temperature.

In the second stage, after weeks or months, the pain is *gnawing*, with soreness referred to the bone and starting of the limb at night. In this connection, it is proper to quote the emphatic language of *Barwell on the Joints, p.* 136, where he says:—

"These sensations have been supposed to be caused by an ulceration process going on in the cartilage, and so indeed they are, but only in a secondary manner, for the pain is directly produced by the hyperæmia of the sub-articular vessels of the bone produced by the cartilaginous inflammation. Cartilage, whether healthy or diseased, possesses no nerves, the only conductors of impressions to the brain; then it is as insensible when inflamed as when not inflamed; but hyperæmia produced thereby, in such an unyielding structure as bone, sets up these painful symptoms."

"Another sensatiom, attributed with equal want of precision to ulceration of cartilages, is tenderness on pressing joint surfaces together. The origin of this symptom, although obscure, I believe myself to have detected. By questioning, for years past, every patient that came in my way; by observing the species and succession of different sensations, and examining, when possible, the joints of those whose symptoms have been thus noted, I have come to the conclusion that this tenderness indicates that the articular lamella has given way over a larger

or smaller extent, and that the cancelli are laid bare to the joint."

Again, *p.* 244. "Pathology shows us that in a synovitic disease no special action is produced among the muscles, until the bone *underlying the cartilage* becomes affected. Again, we see that when *that portion* of bone is *primarily* diseased, the spasms of the muscles producing the start and shock are among the earliest symptoms. We find that a carious state of this portion of bone is extremely irritating, and sets up not merely temporary spasms, which pass like electric shocks over the limb, but that a slower and lasting contraction takes place. This phenomenon affects nearly all the muscles moving the lower bone of a diseased joint, but it predominates in the flexors, and, therefore, the lower bone becomes rigidly bent upon the upper; the muscles feeling tight and cord-like under the skin. Such contraction is produced by a morbid form of reflex action, carried from the nerves supplying the part to the muscles. * * * This contraction continues during sleep, and is of greater power and duration than any voluntary contraction. The spasms are more violent when the will is withdrawn, and they precede the paroxysms of continued pain; and the muscles affected with this peculiar contraction waste with more rapidity than in any other disease, except in certain cases of irritation of the spinal cord producing spasmodic muscular contraction. * * * Although the muscular phenomena are originally produced by the irritation of the joint disease, they eventually increase, or altogether support its morbid actions, by forcing one tender bone surface against another. * * * Sometimes, but at a later stage, when the tonic contraction of the muscles produces dislocation, the spasms and starts abate very much indeed, or disappear altogether—the displacement of one bone upon the other giving instant relief—a proof in aid of the fact (inference) that it is the mutual pressure which produces the whole train of symptoms."

Another class of joint destructions arises from immobility of the parts, with the ordinary pressure occasioned by the tonic contraction of the muscles.

Mons. BONNET, of Lyons,* quoted by Dr. H. G. DAVIS, in *Transactions of the American Medical Association*, 1863, gives the result of observations by himself and TESSIER, on the effects of prolonged immobility of joints. He says, "I am about to demonstrate, anatomically, that long continued immobility can produce severe disease in healthy joints," and then goes on to give the following results:—

1st. Effusion of blood and serum in the articular cavities.

2d. Injection of the synovial membrane, and the formation of false membranes.

3d. Alteration of the cartilages.

4th. Anchylosis.

He says, "I have not mentioned stiffness of the joints, as among the anatomical lesions which immobility produces. This stiffness is frequently observed, and ought to be particularly considered as an effect of the alterations which the autopsy reveals in the cartilages and in the synovial membranes."

Mons. TIESSIER has the credit of having first noticed the effects of immobility upon the joints. The latter says, "I have almost invariably found in all the articular cavities of the diseased limb, even in those most remote from the solution of continuity, the secretion of synovia replaced by bloody serum, and even by liquid blood almost without admixture. In one case, and one only, I have found clots of blood. This was in an old man, confined six months for fracture of the neck of the femur."

BONNET says sanguineous effusion and injection of the synovial membranes are the two first effects produced by immobility. In all the cases in which Mons. TIESSER observed them, they were already supplied with vessels, and adherent to the cartilaginous surfaces.

"Their existence appeared to demonstrate that long continued repose can produce, in the joints, lesions of an inflammatory nature."

"Continued repose can produce redness, swelling, softening, erosion, and wasting away of cartilage. The redness may be

* Traite des Maladie des Articulations, accompagne d'un Atlas, avec 16 planebes, par A. Bonnet, Prof., etc., etc. Paris et Lyons. 1845. Tome 1, f. 9, et seq.

uniform or punctate. Where the cartilage is not eroded, it presents itself under the form of ecchymosis, more or less deep. On the contrary, where the cartilage is eroded, it is unequal, dotted."

Dr. DAVIS, in the same paper, *p.* 158, quotes from Dr. WILLARD PARKER, of New York:—"I have often seen in the knee-joint, after amputation, when the joint was opened, that when the surfaces had remained long in contact, the synovial membrane and cartilage were removed by absorption, and the bone, at the same point, dead for from an eighth to half an inch in depth.

"In exsection of the knee-joint, on opening the cavity, I have found the same destruction to have occurred.

"The same pathological condition is observed in the hip-joint. Indeed, I regard it as established, that if the surfaces of joints be allowed to remain long in a fixed position, the pressure from the muscles causes destruction of the substance making the wall of the joint. We see the same condition resulting in a joint, that happens when pressure is allowed upon the heel in the management of a fracture, viz., ulceration and sloughing."

Dr. WM. H. VAN BUREN, of date 1860, in a letter to Dr. DAVIS, says, "In thinking over the many cases of diseased joints which I have examined after amputation, and otherwise, my impression is, that the greatest amount of disorganization has existed when the opposed surfaces of the joints have pressed against each other. * * * A recent case, in which I exsected the knee-joint of a young woman, for chronic strumous synovitis, afforded strong and indisputable evidence on the point in question. In the centre of each of the articular depressions of the tibia, I found a plate of necrosed bone, each about the size and thickness of a dime, lying loosely upon a bed of granulations. The articular surfaces were also profoundly altered, but except at these points not beyond the possibility of repair to the extent of anchylosis."

In this connection, it is proper to say that, through the politeness of Prof. EDMUND ANDREWS, of Chicago, I have been shown a specimen of inflammation of the knee-joint, exsected by this

gentleman, in which there was an exfoliation, half an inch in diameter, upon one of the condyles of the femur, and a corresponding necrosis, preparatory to exfoliation, upon the opposed surface of the tibia. These were at points where the erect posture or the straight position would bring the greatest pressure.

It has been claimed that the occurrence of necrosis upon a joint surface, induced a similar disease in the corresponding point of the surface of the opposite bone. The light in which the subject is here viewed, renders it probable that pressure is the cause of necrosis in both bones, and that the necrosed portions are opposite each other, not because one produces the other, but because this situation is necessary to the mutual pressure of the joint surfaces, and the observed fact is that the necrosis generally takes place where the shape of the bones renders the pressure the greatest.

Dr. DAVIS quotes two cases from BONNET, of fracture of the neck of the femur within the capsule, in which (the patients dying after long confinement) all the joints below the injured joint were in a state of disorganizing inflammation, while in the joints injured, no such result was found. Dr. DAVIS explains the mystery thus:—"The head of the femur broken off and lying loose, does not feel the force of the muscular pull—the other articulating surfaces do."

A painful inflammation of joints, however excited, at length induces cramps or spasms of the muscles passing the affected joint, which may be both paroxysmal and permanent, sometimes acting with painful exaggeration, but pulling constantly, with an increase of the natural tonicity; the stronger flexors usually gaining upon the weaker extensors, until the joint becomes so flexed as to relieve the inflamed joint surfaces from the pressure at first occasioned by the muscular contraction.

The effect of this permanent spasm of the shortening muscles, is to produce a rigid state, to which BARWELL has recently given a new name, that of "contracture." This is his own definition of the condition. *On the Joints, p.* 315:—

"The muscles which are affected with contraction, gradually shorten organically and permanently; they become passively

contractured, that is to say, their decrease in length is not merely a passing state, which will disappear when the stimulus ceases. They become fixed in this shortened condition, either by the gluing together of their elements, or some like cause, and they cannot of themselves resume a relaxed and lengthened position. * * * It appears to me that the change is located in the sheath of the fibres, rather than in the fibres themselves. Every fibre of a muscle is composed of a sarcous and of an investing wall; the active contraction of a muscle is produced by the shortening of the flesh; passive *contracture* supervenes after the interior has been for some long time in this shortened condition, when the investing part adapts itself permanently to that shape, and each wall of every muscle cell is fixed in its abbreviated form. Moreover, each portion of areolar tissue investing the fibrous bundles assumes permanently the new form impressed upon it by the inclosed contracted sarcous. Such change does not forbid continuing active contraction, for the state, *contracture*, depends upon the change in the passive parts of the organ, to which ordinary muscular action may be added."

Treatment.—In the first stages of any disease of a joint involving the synovial membrane and articular cartilages, the first indication, obviously, is to give the parts the conditions of the least possible excitement or irritation. Rest, and such moderate extension as to counteract muscular contraction, measured by the feeling of comfort, meet the requirement. Warm or cold applications, according to the amount of heat to be overcome, and in violent inflammations, with rapidly accumulating pus within the synovial membrane, free, that is, long incisions into the cavity of the joint should be made, to give free outlet to the offending fluid. One of the valuable contributions to surgical science, by the late lamented Dr. E. S. COOPER, of San Francisco, was a more clear and emphatic enforcement of this expedient in acute inflammation of joints, from disease and injuries. The incisions should be free enough to discharge not only pus, coagula, concretions and sloughs whose presence, in a decomposing state, poisons the parts, aggravating the inflamma-

tion, and increasing the amount of destruction. After free incisions it is practicable to wash out the materials that do not readily flow of their own accord. The old-fashioned way of "lancing" a joint, is altogether inadequate. It is hardly necessary, however, to say that the heroic incision need not be practiced in anticipation of the active and destructive inflammation, but only after the unequivocal establishment of suppuration; for, by the proper sealing of the wound, absolute quietude, arterial sedatives, and regulation of the local temperature, with the necessary depletion by the alimentary canal, the dreaded inflammation may often be prevented. Later in the case, local stimulants, as mercurial ointment, liniments, affusion of water, and passive exercise, and then active exercise practiced during sufficiently brief periods, close the treatment.

To extend or break up adhesion, and remove distortions, apparatus must be employed, to be noticed further on.

The constitutional treatment cannot differ from that of diseases of other parts presenting the same pathology. The principles are pretty well explained by ABERNETHY, in his little work, entitled *Surgical Observations on the Constitutional Origin and Treatment of Local Diseases.* The chief advance upon ABERNETHY, is in the employment of iodine, a great amount of which, however, is thrown away, through the neglect of that eliminative treatment, without which the correcting effects of iodine and its compounds will too often fail to be realized.

BARWELL, in his work, *On the Joints*, reproduces ABERNETHY'S principles, and, in addition to them, he makes a very important distinction between the treatment appropriate to those cases of strumous diseases in which the blood fills the capillaries, producing a considerable degree of redness of the general surface, and those cases in which there is pallor and emaciation. The former cases require purgatives before iodine, iron, or other alterants and tonics will produce any abatement of the local diseased activity. It is often surprising how rapidly a local disease will ameliorate, after a thorough purgative, acting upon all parts of the intestinal tube and tributary glands, to remove secretions and excrements too long retained. The

repetition once a week, for a child five or six years old, of a combination of a grain of calomel, a-twelfth of tartar emetic, and half-a-grain of compound extract of colocynth, or some similar purge, will often work wonders, after an entire failure in the employment of iodide of potassium, iodide of iron, quinia, and cod liver oil, without this purgative to precede and interlude the alterant and tonic treatment.

In inflammations of the more acute kind, much is gained in the early periods by securing, temporarily, a decided control over the circulation, and for this purpose, no agent, yet known, is equal to veratrum viride. During the depression of arterial action, the capillaries regain much of their contractility.

Blisters, setons, issues, moxas, and cauteries, actual and potential, if used at all, should be employed in the later periods of the disease. They have all fallen into great neglect of late, apparently from the present epidemic influence of sugared medicine. The pain of the application of moxas and cauteries, may be altogether neutralized by ether or chloroform, and still they are in great disfavor. It is difficult to conceive that the confidence reposed in them half a century ago, was altogether a mistake, though it was, perhaps, too great and too indiscriminate. There should not only be a freedom from activity of inflammation, but the location should be far enough from the seat of disease not to subject the near branches of the same nerve to irritation. The power of burns and wounds, and of diarrhœa from irritability of the mucous membrane of the alimentary canal, to produce those palsies, both of motion and sensation, now denominated reflex, is a presumption in favor of the power of counter-irritants to change or allay the painful excitement of diseased joints, and attendant muscular spasm. To discriminate the cases in which to employ the agency, is the point. Perhaps the most powerful and least painful of all these, is the actual cautery, applied very rapidly and very lightly, and frequently repeated. And yet the agent has gone into almost entire disuse.

BARWELL quotes a case from RUST, of Vienna, of a young gentleman suffering severely from hip disease, whose parents

could only persuade him to undergo the application of the hot iron by promising to take him to the theatre that evening. The application was freely made, and the boy's pains were so much diminished thereby, and he was so cheerful, that he insisted on the fulfilment of the promise, and he greatly enjoyed the entertainment.

The influence of the counter-irritant on the disease may, perhaps, have been overestimated, by its power in paralyzing the spasmodically excited muscles, and thus diminishing the pain of their contraction.

There comes a period in the process of suppuration, when the pus has escaped from the joint, in which the propriety of opening the cavity and discharging the contents becomes a question.

I incline to the advice of SOUTH, who says, in speaking of abscess of the hip-joint (*South's Chelius, vol.* i., *p.* 299), "On the whole, I think it preferable not to meddle with abscesses of the hip-joint, unless they excite much constitutional irritation, and until the skin is on the point of ulcerating; then they may be punctured, and untoward symptoms rarely follow."

It is appropriate here, to notice, more in detail, the history and philosophy of extension, as an element of treatment in inflamed joints. The earliest application of extension during the period of inflammation, which I can find, is by BRODIE in his *Pathological and Surgical Observations on Diseases of the Joints, p.* 145, (published about 40 years ago,) and quoted in *South's Chelius, American Edition, p.* 296, where, speaking of disease of the hip-joint, he says:—"At a later period, when, in consequence of extensive destruction of the articulation, the muscles begin to cause a shortening or retraction of the limb, I have found great advantage to arise from the constant application of an extending force, operating in such a manner as to counteract the action of the muscles. For this purpose, an upright piece of wood may be fixed to the foot of the bedstead, opposite the diseased limb, having a pulley at the upper part. A bandage may be placed around the thigh, above the condyle, with a cord attached to it, passing over the pulley and supporting a weight at its other extremity. I will not say that the

effect of such a contrivance is to prevent the shortening of the limb altogether, but I am satisfied that it will, in a number of instances, render it less than it would have been otherwise, at the same time preventing, or very much diminishing, that excessive aggravation of the patient's sufferings, with which the shortening of the limb is usually accompanied."

This quotation should be regarded as remarkable, on account of the length of time the suggestion of extension seems to have lain dormant. It is remarkable that BRODIE himself, finding the expedient effective, in diminishing the painful contractions of the muscles in the later stages of the disease, did not think of using it to prevent the conditions upon which these painful contractions depend.

Dr. LIONEL BEALE, in his work *On Deformities*, published soon after *Brodie's Observations*, speaking of contractions of the knee, *p.* 99, says:—"Gradual extension, friction, the application of vapor, and mechanical aids to allow of exercise, are the means to be employed. *But, before having recourse to them, we must be certain that all active mischief has ceased, and be very cautious that we do not reproduce it.*"

It is plain that BEALE did not understand the expedient of quieting the irritation of inflamed joints by extension.

Coming down to 1860, we find BARWELL, in England, in his word, *On the Joints*, *p.* 144, (speaking of local treatment,) saying:—"The first and most important part of the local treatment, is rest. A time arrives, as we shall see, when it becomes a grave question whether entire immobility should or should not be continued, but there can be no doubt that at first the joint should be kept perfectly still by bandaging a well-padded splint upon the limb. The joint itself must be left uncovered by the bandage, for the application of any remedies that may be desirable, which in this stage of the disease belong chiefly to the class counter-irritants and derivatives."

At this date, then, BARWELL applied splints in the earlier stages of diseased joints, to secure rest, and not to produce extension and separation of adjoining surfaces, with reference to the avoidance of the irritation of the pressure of inflamed surfaces by muscular contraction.

In America, Dr. H. G. DAVIS, in *Transactions of the American Medical Association* for 1863, *p.* 150, says:—"I insisted from the first, on the fact (principle) that mobility is natural to, and required by, a diseased, as well as a healthy joint, and introduced that as one of the principles of my treatment.

"I insisted, also, from the first, upon the fact (principle) that pressure, mostly owing to muscular contraction, is the most active agent of destruction in the morbid process, which it is the object of my treatment to overcome, and I therefore directed my efforts to obviating, *in all the stages of the morbid process*, the pressure to which the parts diseased are exposed. To attention to this, I ascribe my main success.

"The distinctive principle of my treatment, is the procuring to the diseased structures support without pressure, and motion without friction.

"The treatment itself, concisely stated, consists in abstraction of the joint affected, by continued elastic extension."

In a paper published in the *American Medical Monthly*, 1856, Dr. DAVIS draws the following indications for mechanical therapeutics:—

"1. That in all diseases of joints without the capsular ligaments, extension should be applied when the joint becomes functionally immovable.

2. In diseases within the capsular ligament, the extension should be applied at once.

3. In immobility, from whatever cause, the limb must either be frequently moved, or it must be extended."

There comes very soon, in violent inflammation, a preponderance in the pull of the flexors, over that of the extensors, as if for the purpose of placing the joint surfaces in such relation to each other as to relieve them from pressure. The good result of Nature's therapy is secured by a position of the limb which renders it afterwards usless, unless a surgical process is resorted to, for the purpose of restoring the limb to the straight position. I cannot enforce this point better, than by quoting from *Tamplin on Deformities, American edition*, 1846, *p.* 168, this clear statement:—

"During inflammation (of synovial membrane) there is a constant effort to keep the joint at rest, the slightest motion occasioning the most severe pain; and the position in which there is the least amount of pressure on the articular surfaces, is undoubtedly the flexed position. Be this pressure ever so slight, it must increase the inflammation in the synovial membrane, and, consequently, the pain, which is at times most acute, requiring the most active measures for relief. The flexors, therefore, are constantly acting, and become eventually contracted, from the flexed position being maintained during the inflammatory attack."

This pathology should have suggested extension, but it did not. TAMPLIN accepts the anatomy of a synovial membrane over the articular cartilage, with sensitive nerves in it, which is a mistake. The pain from pressure at a period so early, is probably from the influence of the pressure upon the inflamed bone immediately subjacent, in which the nerves sensitive to pain have been aroused into activity.

The force to be applied, and the pain to the patient, is far less to prevent this deformity, at the same time that the surfaces are relieved from pressure upon each other, than that which is required to overcome the deformity, when once it has occurred.

Extension in inflamed joints, so far from being painful, is, on the other hand, positively grateful to the patient; so that the sensation of comfort may safely be made the test of the amount of extension required.

An instance, illustrating this, occurred to the writer, in the case of an acute traumatic inflammation of the knee-joint, with extensive suppuration and burrowing of pus, along the course of the muscles. This patient came under my care, at the end of the sixth week from the time of the accident, with a flexure of the knee to an angle of 45 degrees. Adhesive plasters were placed upon the leg, as in the treatment of oblique fracture of the femur, and extension made by a twisted rope passing from the loop of plaster under the sole of the foot, to a point eighteen inches beyond, while counter-extension was made from the

chest, by the attachment of long and wide adhesive slips, before and behind the chest. Extension proved not only a comfort to the patient, but an adequate means of restoring the limb to nearly a straight position, though some degree of false anchylosis followed the extensive cicitrization of altered or destroyed parts. The turning of the cross-stick, to twist or untwist the rope, was left to the wife of the patient, who, under his direction, relaxed or tightened up the extension.

The amount of movement of one bone away from the other, is necessarily limited by the length of the articular ligaments, which, in their normal state, are adapted to hold the bones in very near proximity. If, therefore, the attempt is made to regulate the extension by any measurements, there will be a strong temptation to employ too much force, producing a painful and unnecessary tension of the ligaments holding the bones of the joints in proximity. Where the limb has already become flexed, the amount of extension which would have been comfortable during the preceding inflammatory process may be safely exceeded, but while the limb has not yet lost its straight position, the extension should not be permanently practiced to the extent of painfulness.

Barwell fully endorses this treatment, in the confirmed stage of inflammation, though he fails to advise it in the very beginning. Quoting from *p.* 328, he says:—"We have only to prevent the muscular spasm from pressing the two portions of bone together, and the disease will decrease. * * * The muscular contraction which pulls the thigh up must be met by another which pulls it down. We cannot, nor do we wish to separate the bones, but we can so arrange that the muscular force shall expend itself upon an external object, and leave between the head of the thigh and the acetabulum no more than the normal amount of pressure, perhaps less. * * * These medns will not cure the disease, but they will place it in the best possible circumstances for getting well."

Distortions and Stiffenings after the Subsidence of Inflammation.

The distortions and stiffenings which result from cicitrization and anchylosis, after extensive destruction of the tissues of

joints, become the most intractable cases. Restoration of motion and of form, by gradual extension, is discouraging, from the slow nutritive changes of the ligaments, the cicatricial tissues, and the "contractured" muscles; and the sudden rupture, by violent force, may excite an unwelcome inflammation, or be itself altogether impracticable without tearing open the integuments, or fracturing the bones, or both, which might involve dangerous nervous shock or subsequent constitutional sympathetic irritation.

The following illustration of a tibia partially dislocated backward upon the femur, and permanently flexed, from inflammation of the joint, and the disproportionate pull of the flexors, which arises from irritation, affords a good conception of a class of irremediable deformities. Yet it would have been simple and easy to have entirely prevented this flexion and dislocation, by extension, applied before the deformity commenced. The extension would not only have prevented the deformity, but it would have diminished the inflammation and the muscular contraction, by lessening or suspending the irritation arising from the contact and frictional movements of the opposed joint surfaces.

From TAMPLIN, illustrating flexor of the tibia with displacement:—

a external lateral ligament.
b ligamentum patellæ.
c femur.
d tibia.
e fibula.

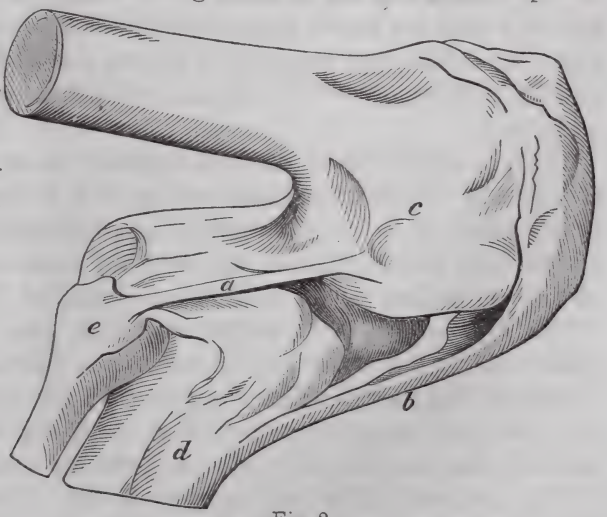


Fig. 2.

Sometimes, however, cases, apparently intractable, yield to mechanical force, proving abundantly successful. I quote in point, an instructive case, also from *Tamplin*, *p.* 169:—

"In one case," of false anchylosis, "which arose from a cart-wheel passing over the thigh, just above the knee, there was motion, but of an elastic kind, and, after the leg had been forcibly extended, it returned with an impulse to its contracted position, without the flexors acting in the least, so that it was evident there was some adhesion in the joint. The flexors I divided, however, and the extension was kept up for some weeks, with but little benefit, and, from the severity of the increasing forcible extension necessary, the patient suffered so much that he left the institution, determined to submit to no more treatment. But, after a few weeks, he returned penitent, when I again operated, and resumed extension. We progressed, as heretofore, very slowly. From the constant pressure kept up on the anterior part of the thigh, a slough made its appearance, upon the healing of which I resolved to make no more attempts, and informed the patient that I feared nothing further could be done for him. This frightened him, and he set to work to screw his leg straight, at all hazards, upon doing which, a sudden and loud snap was heard, compared by the other patients to the report of a pistol, and immediately the leg could be placed in a straight position. * * * He has left with a comparatively useful limb."

The division of tendons, and such ligaments as can be reached, may greatly aid the effort at restoration, and, perhaps, if there is any degree of motion, the attempt should be made to convert useless limbs into useful ones, for, after the failure of strenuous efforts, the patient is apt to be more reconciled than before.

The division of the muscles themselves, may sometimes greatly aid in the restoration of the proper position. In the vicinity of large arteries, however, the subcutaneous division is not free from danger, however skilled the operator may be in anatomy, for there may be deviations from the usual relations.

That so accomplished an operator as Dr. Sayre, of New York, should have lost a patient from wound of the femoral

artery, under these circumstances, is justification enough for this caution. See *Transactions American Medical Association*, 1863, *p.* 168.

In bony anchylosis, or in false anchylosis, in which the ligamentous joining resembles that of an ununited fracture, the only remaining resource is Barton's operation, which consists in sawing the bone and removing a piece of such a shape as to permit the restoration of the limb nearly to its original general direction. This operation was originally practiced by Dr. BARTON, of Philadelphia, upon the lower portion of the femur, and has since been repeatedly practiced.

This operation was performed upon the femur, above the trochanter minor, by Dr. L. A. SAYRE, of New York, in 1862, making a movable and useful joint; a tolerable substitute for the hip-joint, which had become motionless from anchylosis. See *Transactions N. Y. State Medical Society*, 1863, *p.* 103.

4. *Accidents*, breaking, tearing, bruising, burning, or freezing the tissues, followed by the loss of the parts, or the failure, imperfection, or perversion of their union or restoration.

The deformities resulting from breaking the bones and tearing the ligaments, are more easily prevented than removed. The accidents are sometimes of such a nature as to render some degree of deformity unavoidable, but in those cases, much may be done, by skilful management, to obviate permanent malpositions and ill-shapes.

The discussion of the treatment of fractures and dislocations, is outside of the scope of this paper. Some of the deformities after fractures admit of great amendment, by bending the new formed bone when the deviation of the long axis has occurred, from neglect of extension or lateral support, or from premature use of the limb, and the remedy is not delayed too long; and at a later period, by refracturing the bone and keeping the fragments in proper relation to each other, during the period of repair; or by drilling the bone to secure inflammation and softening, as suggested by Dr. BRAINARD, in *Transactions American Medical Association*, 1854, and, after about ten days, employing force, applied gradually, to secure a change of nutri-

tion with the changing shape, or applied suddenly, to overcome the deviation by interstitial fractures.

After severe bruises, with or without laceration of parts, the destructive inflammation and gangrene, with extensive sloughing of intermuscular tissue, in the progress of areolar erysipelas, the greatest attention to passive movements may be necessary, during the period of repair, to prevent the formation of permanent adhesions and malpositions, and to stimulate the absorption of the organized exudations, before they have assumed such density of structure as to render them extremely difficult of elongation. In consequence of this, it may be necessary to divide them, in order to secure the proper restoration of position; and, where the integuments are involved, to perform plastic operations, to cover the affected parts with healthy integument.

After freezing, the indication is to recure sufficient slowness in the thawing of the parts, by the employment of snow or cold water. The sloughing of integument may, in some cases, result in cicatrices, resembling those from burns, and requiring similar treatment, both for prevention of deformity and its correction.

Burns result in some of the most frightful distortions, exceedingly difficult to prevent by extending appliances, and more difficult to remove by any means except the excision of the cicatrix. It is surprising to see into what a minute space a cicatrix will contract, when resistance to its contraction is removed.

The true indications in the treatment of burns, with reference to the prevention of deformities, are to moderate the intensity of the inflammation, first, by the local employment of turpentine or other capillary stimulant, and the internal administration of opiate and alcoholic remedies, to counteract shock and to annul or diminish reflex action; then, to exclude air and other local irritants, by the application of flour, eggs, lead-paint, poultices, &c., and to control the general circulation by alvine evacuants and veratrum viridi, or other arterial sedative; and, finally, with the commencement of granulation and cicatrization to support the general powers by nourishing food, and

tonics if need be; and to counteract the drawing of the cicatrix by mechanical appliances. By this means, the shortening of cicatrices on the limbs, will stretch the sound skin chiefly in the direction of the circumference; and when the contraction of the cicatrix has become complete by the yielding of the skin in this direction, the danger of distortion from the longitudinal pull is chiefly past.

To elongate a contracted cicatrix, in order to remove distortions already produced by its contraction, is altogether impossible. The correct treatment is, to remove the cicatrix, and supply its place by sound skin, taken from neighboring parts, by a plastic operation; and, where this is impracticable, to make a free incision through the narrowest part of the contracted bridle, to straigthen the limb and hold it in its restored position, until, by the contraction of the new cicatrix, the sound skin has been drawn in from other directions. In some cases, an elastic retention will resist the pull of the cicatrix, at the ame time that the functions of the muscles and joints are preserved, and the condensed sub-cicitricial tissue is more readily loosened up by the to and fro movement, and the surrounding integument is more speedily and more perfectly enlarged, to compensate for the contracting cicatrix. A rubber spring is most convenient for this purpose. Where the situation is not upon the limbs, but upon the neck, chest, or abdomen, the resistance to the contraction of the cicatrix is more difficult, and is sometimes impossible. Adhesive plasters, into the middle portions of each strip of which a portion of a rubber ribbon is inserted, promise more than any other expedients. The plaster must inevitably slide somewhat, and the rubber will secure an efficient pull, notwithstanding the sliding, and that, too, without so much interference with the ordinary movements as plaster alone imposes.

5. Mutilation of parts, designedly done, or force or restraint, artificially applied, like the compression of the feet of the female children of Chinese grandees, the heads of some American Indian tribes, and to a less degree, the feet and waists of genteelly educated children in modern American and European society.

We laugh at the tastes and usages of people who attempt to secure distinction for themselves and their children, by compression and mutilation of various portions of the body, so that a lady has the inimitable distinction of requiring to be carried everywhere she goes, because her feet have been purposely made useless to her; a chief, the high honor of having a head shaped like an idiot's, or the face slit in various parts for the insertion of trinkets. But it may justly be claimed, that these exhibitions of taste are reasonable, compared with the practice among us of compressing and staying up the chests of growing girls, so as to diminish the capacity of the lungs, and so weaken the spinal muscles as greatly to favor lateral curvature.

A strange sentiment prevails among us, that narrow feet indicate refinement, and broad feet, vulgarity; and so, forsooth, every mother, for her children, and all vain youth of both sexes for themselves, must compress the feet with shoes too narrow for their size, until a portion of the toes ride upon the others; and the whole foot is so compressed as to fail of the graceful elasticity natural to it. Not the least deplorable condition of the deformities resulting from these usages, is the impossibility of removing in the adult the misshapes acquired in childhood and youth. A deformity, admitted to be such, may be subjected to treatment early; but a deformity, deemed fashionable, will receive no attempt at remedy, until suffering prompts the victim, too late, to seek relief.

There is one possible good of these deformities; that is, to convince ignorant people that, as the body is capable, in the growing period, of having these abnormal shapes purposely produced; so, by appliances purposely made, deformities may be gradually corrected.

PART SECOND.

Particular Diseases and Deformities.

A. *Inflammation of the Joints of the Extremities and Resulting Deformities.*

First. Hip Disease—*Morbus Coxarius.*—The circumstances of inflammation of this joint single it out as the lion of its class. It is the joint to which more force is applied than to any

other joint in the body, with more varied and more extensive movements, with a closer contact of surfaces, and affording more extensive friction surfaces when the parts are inflamed. It is surrounded by stronger and more numerous muscles than any other joint, which, when spasmodically contracting, subject the head of the femur and the upper surface of the acetabulum to great pressure. On this account, synovial and cartilaginous inflammation, when once initiated, is more aggravated by movement and pressure, than in any other joint. The depth of the joint may be the reason for the obscurity of the sensations of discomfort in the early period of the disease, and for their reference to the parts lower down, and especially on the knee-joint.

The apparent elongation of the limb, from the tilting of the pelvis, may be a movement, in which the lumbar and ilio-lumbar muscles relax, to secure sympathetic relaxation of the ilio-femoral muscles, and thus diminish the pressure of the joint surfaces. After the period of muscular spasm has arrived, this is all reversed; the lumbar and ilio-lumbar muscles, contracting in their turn, from sympathy with the irritant contraction of the ilio-femoral muscles.

This primary dropping of the affected limb may be taken as a hint at the correct mechanical treatment in all stages. This branch of treatment, in the early period of the disease, has been sufficiently discussed; but in the periods of more aggravated suffering, its importance needs still more to be enforced; and this can best be done in connection with the farther notice to be taken of the pathology. As a most impressive presentation of the subject, attention is invited to the following quotations from *Barwell on the Joints, p.* 312:

"The nervo-muscular phenomena in hip-disease are so prominent and remarkable, that their evident results, as seen in the posture and apparent length of the limb, have chiefly attracted the attention of surgeons; and yet, the peculiar influence which they have upon the continuance of the malady, has escaped notice. Be it observed, that the constant and violent contraction does not simply produce ad- or ab-duction, according as one or

the other set of actions may prevail; but as, from the direction of the muscles, it is evident, it must draw the thigh up and cause the head of the femur to press abnormally against the acetabulum. Thus, the pristine inflammation, having produced a contraction, the head of the thigh-bone begins to press with abnormal force and constancy in the upward direction. * * * To prove this position, we have only to look at a pathological museum. We shall find a few specimens in which the action is distributed over the whole joint surface; a very few indeed, in which the inflammation has chiefly attacked the lower portion or anterior part of the acetabulum and femur, but in a proportion so large as to render the above examples mere exceptions, the upper lip of the cotylon cavity and the corresponding portion of the head of the femur are ulcerating, while all the rest of the bone may be untouched. Such constancy of action can only be accounted for by the fact that abnormal muscular contraction produces pressure, and thereby ulceration of the parts. * * * Thus, the acetabulum is made to travel upward and also inward, whereby an opening into the cavity of the pelvis is not unfrequently produced. I say, that such evident yielding to pressure is not an exceptional case, but is the rule; that, when we find a hip-joint ulcerating in any other way and position, it is that some rare circumstance has caused a primary osteitis in that particular spot. It must also be remarked that, as the head of the femur travels upward, producing ulcerative absorption in that part, against which it so abnormally presses; it causes, beyond that point, an additional growth of bone, forming a new lip to the new cavity."

Page 317. "*Dislocation* of the head of the femur, from disease, or spontaneous dislocation as it is called, is an occurrence so unusual, that one is astonished at the general credence in its frequency. It is only about ten or fifteen years ago, that every hip-joint disease was supposed to end in this way; but, if a search be made in the College of Surgeons, St. Thomas', St. Bartholomew's, or others of our great pathological museums, there will be found very few specimens exhibiting, simultaneously, the signs of morbus coxarius and spontaneous dislocation.

On the other hand, it is by no means uncommon to find the head and neck of the femur shriveled to little more than a button-like projection, the acetabulum quite altered in form and place, and yet the bone retained in its cavity. * * * Spontaneous dislocation occurs only in cases of so cachectic a character that new bone is not produced beyond the focus of suppuration."

Second. *Inflammation of the Knee-Joint* appears in the same classes of tissues, in the same forms, with the same course and termination as the same disease of the hip-joint, only that the thinness of covering over the knee-joint renders the early diagnosis less obscure. There is less danger of being misled by the sympathetic pains which so often deceive in the early period of hip-disease. The indications for treatment are in all respects the same, and the facility of extension is greater. While the swelling and tenderness, on pressure, about the hip-joint sometimes renders it necessary in treatment to make counter-extension from the chest, this expedient is rarely necessary in disease of the knee-joint. The cases of *white swelling* of the knee, in which chest counter-extension will be most often found advantageous, are those in which extreme flexion has already occurred, with purulent burrowing tracks among the muscles of the thigh. By this mode of applying extension, the posterior part of the leg will be the only part of the affected limb subjected to pressure. This mode is equally applicable to flexion of the knee and of the hip-joints, and permits a considerable freedom of movement to the patient. With elastic fastenings, the muscles are permitted to contract and relax, securing to the joints a healthier nutrition than attends a uniform unyielding pull. At length, when the limb is brought out to some approach to a straight position, the counter-extension can be changed from the chest to the groin or the ischium, or to both combined.

Third. *Inflammation of other Joints.* Inflammation of the ankle, of the tarsal and phalangeal joints, hardly admit of extension, nor is deformity one of the frequent results, though stiffness may ensue. In the upper extremity, extension is practicable, but not so necessary, because the muscles are less

strong, and there is no push put upon the bones, as is done in the lower extremities, and, besides, in walking, the weight of the limb amounts to a moderate extension.

Inflammation of a metacarpo-phalangeal joint may require extension, to avoid both stiffness and deformity, and this is easily effected by passing a rubber ribbon over the space between the thumb and the forefinger, and attaching each end to proximal end of a small splint, reaching from the lower end of the radius, to a point a little beyond the end of the affected finger, to which the distal end of the splint is attached by isinglass plaster. The slight, but constant pull, may save the finger from being rendered useless by stiffness or permanent flexion, or both combined, at the same time that the extension is a source of comfort to the patient.

The pioneer in the introduction of practicable forms of apparatus to answer the purpose of extension, is, doubtless, Dr. Henry G. Davis, of New York. In a paper which he published in the *American Medical Monthly*, for May, 1856, referred to in his paper in the *Transactions American Medical Association*, 1863, he says, "There is one point in my mode of making extension, which I think, from the long experience I have had in its use, would be an improvement in the general mode, and it is equally applicable to all extensions and counter-extensions, those of fracture as well as contracted muscles, viz., the use of rubber as an extending power. This will act steadily and gradually, without any violence, and with very little suffering, in comparison with permanent fixtures. When contracted muscle is to be overcome, it steadily wearies it, until it quietly comes off conqueror."

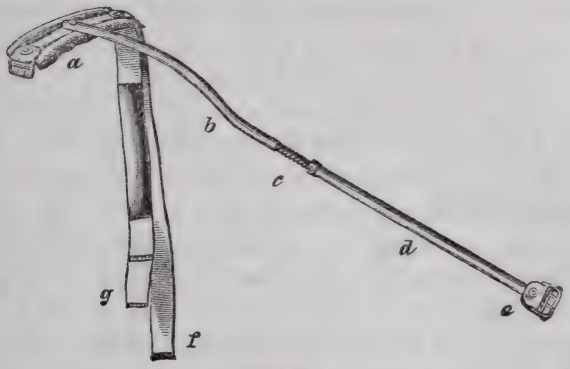
We are permitted to copy the following cuts and descriptions of apparatus from Dr. Davis' report in *Trans. Am. Med. Association for* 1863:"—

"The apparatus, by means of which my treatment embodying the principles advocated in this paper can be carried into effect, is simple and easily explained.

"It must be borne in mind, that I have already said that the essential parts of the apparatus are, means of exerting an elas-

tic, continually-extending force on one side, and a resisting counter-extending one on the other.

"The modifications it undergoes to adapt it to the various regions of the body, every physician can readily understand. I shall describe particularly the splint as applicable to the hip-joint. Reference to the wood-cut (Figure 3) annexed with further aid the reader.



(Fig. 3.)

"An elastic perineal band (*g* in the figure) really constitutes the extending, adhesive plaster strapping around the limb, concentering at a point a little above the external malleolus, the counter-extending power, while a metallic splint (*b*, *c*, *d*, *e*,) is stretched between these, and enables them to fulfil the indications proposed.

"The splint is composed of four parts, viz., an upper or pelvic portion (*a* in the figure), a thigh portion (*b*), a leg portion (*d*), and an ankle portion (*e*).

"The thigh portion consists of a metallic tube curved above (*b*), to correspond to the convexity of the thigh, and ending below in a short, straight piece, to which a long iron double-threaded screw (*c*), also hollow, is firmly secured. The leg portion is a straight metallic tube (*d*), closely investing the screw (*c*), and projecting but little beyond. It is attached to the ankle portion (*e*) in such a way that, in revolving it, in order to lengthen or shorten the instrument, only the screw investment with its nut is turned, while the ankle portion remains

unmoved. This ankle portion (*e*) consists of a triangular-shaped, flat piece of metal, covered by a buckle (as seen in the figure).

"The pelvis portion (*a*) is more complicated than the others. A slightly curved strip of steel half an inch or more wide, from four to six inches (both the length and width varying according to the size of the whole splint) long, is rivited through its centre to the free extremity of the thigh portion, and admits of rotary motion. At one end of this strip of steel a buckle, and at the other the perineal band is attached, and the whole of it is well cushioned. The perineal band is formed of two bands (*f* and *g*), of a length, width, and strength varying according to the size of the apparatus and the circumstances of its application. One (*f*) is longer than the other and inelastic, being made entirely of strong cotton or linen webbing, the other (*g*) is, as it were, an oblong bag of India-rubber webbing (formed by sewing two stripes of rubber webbing together) filled with saw-dust, obtained by sawing across the fibre of pine wood (not lengthwise), tipped at each end with some of the inelastic webbing (such as (*f*) is made of). While the inside elastic band keeps up the extension required, the inelastic sustains any weight that exceeds the extending force as then applied to the patient. It is this arrangement that enables the weight of the body to be borne without harm, as in walking, and that prevents injury from excessive weight or pressure upon the articulating surfaces in cases of accident. Thus, for instance, the head of the femur would, in walking, be violently thrust upward, as the elastic band would yield to an increased weight, were there no inelastic, unyielding band to prevent it; yet, it is obvious that this inelastic band does not interfere with the predetermined amount of tension to be exerted by the elastic one. (This amount of extension is determined and regulated as follows: Buckle the two bands unequally, *i.e.*, let the loop formed by the outside band be longer than that of the inside, and attach a weight to the latter. The number of pounds requisite to stretch the one loop to the exact length of the other represents the amount of extending force the instrument will exert, when exactly thus buckled, when applied upon the limb.

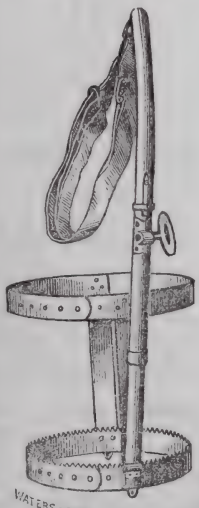
"I will add that here the amount of extending force should be ascertained in every instance before fastening the splint upon the patient; this amount is not to be varied by altering, by means of the screw, the length of the instrument, but by adjusting the two bands.)

"I have found the rubber webbing, with napkin protection to the skin, to be much superior to the rubber tubing. The tubing is seldom of the right elasticity, and is more liable to to heat and excoriate the skin than the webbing, for the reason that it does not absorb the secretions, nor allow the air to come in contact with the skin.

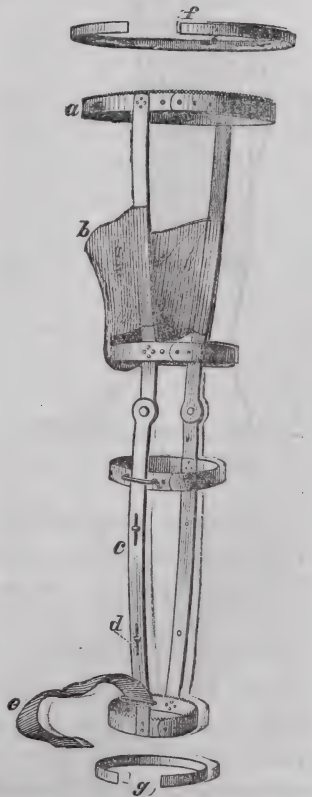
"The granular stuffing moves easily on itself and displaces readily, so as to equalize the pressure, as, for instance, over the adductor tendons in the groin.

"The long splint is best adapted to the majority of cases. Some years ago, I was in the habit of applying a shorter one (Fig. 4) to the femur alone. This leaves the knee at liberty, and in so far is an accommodation to the patient, but otherwise is not so effectual.

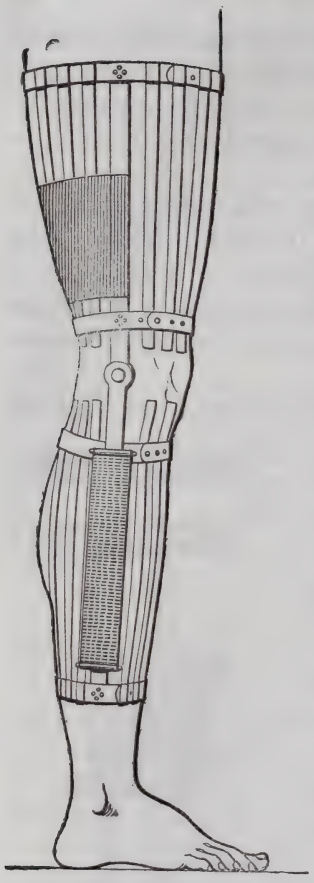
"I also generally use the long splint for disease of the knee-joint, applying the adhesive plasters only to the tibial portion of the limb. I have devised, however, a very convenient instrument



(Fig. 4.)



(Fig. 5.)

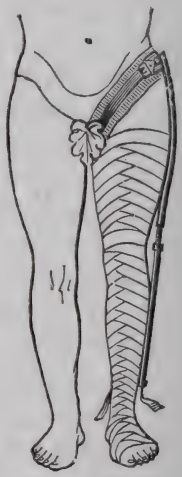


(Fig. 6.)

(Figs. 5 and 6) for extension at the knee-joint, that admits of flexion and extension of that joint, which in cases not too severe is sufficiently effectual.

"Extension should be constant; when not accomplished by the splint, it should be by means of a weight and pulley.

(Fig. 7.)



(Fig. 8.)

"*Mode of Application.*—Cut from a piece of adheisve plaster, spread on twilled goods and kept until the oil entering into its composition has become oxidized, two strips from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches wide, of the length of the limb from the pubis to the malleolus, and two strips a little narrower in proportion to the others, but one and a-half times as long. Fold about an inch and a-half of one extremity of each of the first cut strips upon itself, the adherent sides to each other, and apply one on the outside and one on the inside of the limb, commencing with the folded end about two inches above the outer and inner malleoli, and extending it up in a straight line.

"The other two strips are applied spirally around the limb as follows; Commence on the lower or folded extremity of the straight strip above the outer malleolus, and wind around in front and back, so that the two spiral strips meet in front, a little distance above the patella (as very well depicted in the woodcut, Fig. 7).

"Next, sew a piece of firm, *inelastic* (linen or cotton) webbing, about $1\frac{1}{4}$ inches wide from six to eight inches long, to the lower extremity of each straight strip, taking particular care to include in the attachment the ends of both spiral strips above the external malleolus. The limb is then closely and firmly enveloped with a common roller bandage, from the foot upwards (as shown in Fig 8), the pieces of webbing only being left outside free. Now buckle the ankle portion of the splint upon the external face of the limb by means of the webbing; protect the skin of the groin and parts to be covered by the perineal band by a piece of old, soft napkin or table linen, several times folded and secured by a few stitches; and having previously adjusted the two bands composing the perineal band, as mentioned on *p.* 163, fasten the latter around the thigh, always taking care to have the buckle on the pelvic portion of the splint in front; the screw of the splint regulates its length, so that the required amount of extension can be secured. When all is correctly arranged, and proper extension made, the upper extremity of the splint should fall just below the crest of the ileum."

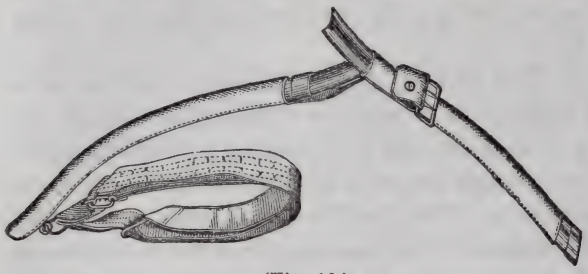
(Fig. 9.)

Figs. (9 and 10) are further modifications of extending apparatus, and (Fig. 11) illustrates the manner of connecting and fastening the two portions of the extending shaft.*

Dr. LEWIS A. SAYRE, of New York, has modified Dr. DAVIS' splint chiefly, by making the extending shaft, in great part, of wood,

* We learn from Dr. Davis that he is preparing to publish all his improvements in surgery in one volume, in order to give the profession the benefit of his methods of treatment, which are the result of many years experience.

which slides in a metallic trough, and fastens by a catch falling between the teeth of a ratch. The counter-extension, as in the apparatus of DAVIS, is the usual oblique band over the groin and perineum.



(Fig. 10.)

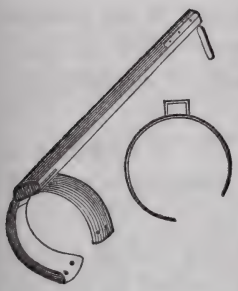
(Fig. 11.)

Mr. RICHARD BARWELL, of London, has, also, a less ingenious modification, figured in his work, *On the Diseases of Joints*, and also in his little book on *Club-Foot, &c.* He claims originality for this, but it is said that one of DAVIS' machines was exhibited in some of the London hospitals before that of BARWELL was invented.

Dr. EDMUND ANDREWS, of Chicago, has devised an extending apparatus, in which the extending shaft is made of gaspipe, with a screw extension, as in the apparatus of DAVIS, but Dr. ANDREWS places the splint upon the inside of the limb, with a sort of crutch head, fitted to the shape of the coverings of the pubis and ischium, to receive the weight of the body in walking, and to be, at all times, the medium of counter-extension, or, more properly, counter-pressure.

All these forms of extending apparatus require more skill in constructing them than the general practitioner can ordinarily find in his nearest blacksmith and carpenter, and I have endeavored to perfect a plan of apparatus which will enable all practitioners, both in town and country, to give their poorest patients the benefits of treatment which, for practical results, may be equal to that of experts in this particular branch.

After trials of various forms, I have settled down upon the plan illustrated in Figure 12. The shaft is placed upon the



(Fig. 12.)*

* Ischiatic crutch for extension in diseases of the hip and knee-joints. The small figure is a profile of the collar attached to the end of the staff.

outside of the limb, and a collar is adapted to the thigh, to press like a crutch upon the ischium. The whole splint (adapted to the left side) is seen in an oblique aspect. The shaft is of hard wood, and has the collar for the ischium upon the upper end, (lower, as seen in the cut,) and upon the other end, an iron foot rod, which is intended to pass through the heel of the shoe. The shaft is made so long that the weight of the body cannot come upon the foot. The collar, which can be made of hoop-iron by any blacksmith, is about 13-16 of a circle, 8-16 behind, and 5-16 before, and should be carefully padded.

For children, this should be temporary, and made of cotton and muslin, in order that it can be easily and cheaply renewed as often as it becomes wet.

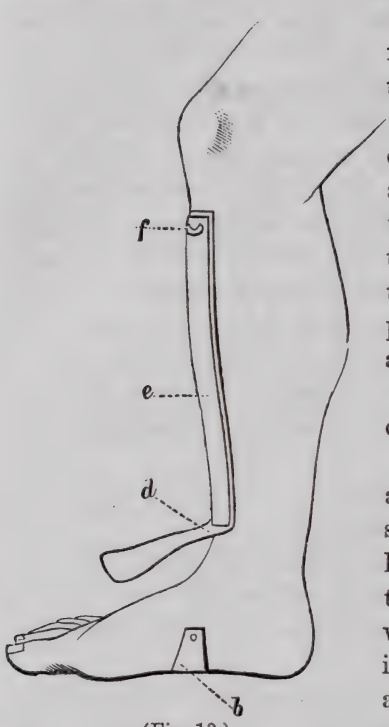
The small figure is an end or profile view of the iron collar attached to the end of the wooden shaft.

The shaft may be made extensible and adjustable, but this requires the skill of a professional instrument maker, and is expensive, while, if made for a particular individual, there is no advantage in it.

The collar should be beveled behind, to apply to the ischium without discomfort, but in front this is not necessary. The open space comes opposite the great vessels descending from the groin. The collar is such a segment of a circle as not to need a strap to hold it in position.

The readiest and most efficient expedient for extension, at the same time that no inconvenient projection is necessarily made beyond the foot, is that invented by BARWELL, and figured in his little book, *The Cure of Club-Foot.* It consists in attaching a parallelogram of tin to the leg, by means of adhesive plaster, so as to get the point of attachment of the extending agent near the knee-joint. A spring of elastic rubber or a spiral steel spring can then be attached above, to the upper end

of this piece of tin, and below, to the lower end of the extending shaft, which may terminate either above or below the foot. The accompanying figure illustrates the mode of applying the tin and plaster.



(Fig. 13.)

Figure 13. BARWELL'S method of attaching a piece of tin to the leg.

d The lower end of a strip of plaster attached to the leg, and upon the outside of which, the tin *e* is applied. The plaster is then turned up against the tin, and circular strips of plaster are applied, covered by a roller.

f A loop for the attachment of the extending spring.

By means of this expedient and the ischiatic crutch, extension upon the hip-joint and the knee-joint can be kept up while the patient walks about, the whole weight of the body coming upon the shaft of the crutch, and being received by the ischium. The muscles passing the hip-joint direct the movements of the limb, but impose no pressure upon the hip-joint, their own contraction being counteracted by the spring which makes the extension.

It is convenient to attach a pretty long heel to the shoe, with a hole in it just large enough to receive the angular spike upon the lower end of the shaft. As this passes through the heel of the shoe, any pull upon the shoe expends its force upon the shaft, through which it finally comes upon the ischium. When the pressure upon the ischium becomes in any degree uncomfortable, the patient puts his hand upon the upper end of the shaft and pushes it down, and relieves the ischium from all

pressure whatever. As the rubber springs yield, the extension is increased, at the same time that the pressure upon the ischium is relieved.

At night, the shoe can be taken off, and the elastic extending straps can then be attached to the angular spike, in order to keep up the extension while the patient sleeps.

B. *Lateral Curvatures of the Spine—Skoliosis.*—Deviations of the spinal column to the right or left of the straight median line, or in one part to one side and in another part to the other side, must depend upon deficiency in the bones, the ligaments and cartilages, the muscles, or in some necessity of the spine to deviate from the straight line to tilt the pelvis toward a short limb, or to conform to changes in the volume of the organs within the chest, or upon several of these causes combined.

The classification of these curvatures, in accordance with their pathological causes, must often be very much in doubt, because the opportunities for *post mortem* examinations in persons dying from other diseases, during the early periods of lateral curvature, must be rare, and, when they do occur, the lesions may be so difficult to distinguish, or the primary alterations in one set of organs, and the secondary changes in another set of organs, may be so equal, that the distinction of cause from effect may be impossible.

In the present state of the science, the classification must be made more upon general considerations, than upon observed pathological states of the organs.

I. The simplest division is based upon supposed weakness of bones in proportion to the muscles rapidly developed.

II. Disease of the ligaments, and bones weakening them, not only relatively, but absolutely.

III. Fatigue of overtaxed, feeble muscles, shirking their work upon the ligaments.

IV. Spasmodic contraction of the muscles of one side affecting a single muscle, or a greater or less number, from irritation in the brain, the spinal cord, or in the course of the nerves, or reflected from some place of irritation outside of the central nervous system.

1. A person, during the growing period, has a course of fever, and upon recovering, gains two or three inches in stature in a very short time, and acquires a curvature while the muscles are in active and healthful exercise.

This picture is in obvious analogy with cases of curvature of the bones of the lower extremeties of infants, in whom the muscles develop more rapidly than the bones, or in whom the ambition of parents or nurses leads to the too early teaching of the child to stand and walk. If the tibiæ were divided into segments, with intervening cartilaginous and ligamentous material, like the arrangement of the spine, it would, doubtless, bend; the bony substances, yielding as readily in the multiplied pieces as in the single piece.

The muscles, outrunning the bones in development in both cases, the principles of treatment must be the same in both. The chief indication must be, to place less weight, or for shorter periods, upon the bones.

For cases of this class, sufficient rest in the horizontal posture is more important to be enjoined than any system of movements.

The movements which are practiced, however, should be so diversified, as to bend the spine in every direction, of which it is capable, and so amusing as to be a pastime to the patient. Of all practices, however, sitting on a bench at school, is most injurious to a person of this class. Permanent distortions, from this class of causes, may require apparatus, as a bow-leg requires a splint and persistent force to straighten it.

2. A young person, falling from a height, or from some other form of violence, sprains the ligamentous fastenings of the spine, and, after several months, a curvature, chiefly on one side of the median line, is noticed, of such a marked character as to seem to have occurred suddenly, while very little complaint is heard from the patient, whose lassitude, and indisposition to the sports of youth, are out of proportion to any feelings of pain or discomfort arising from the disease.

This picture is in plain analogy with those cases of white swelling of other joints, which originate in the ligamentous,

synovial, and cartilagenous investments of the bones, and which are very slightly painful, on account of the paucity or absence of nerves of sensation in the tissues affected, or by their failure to be awoke into painful activity by the low grade of the existing inflammation; producing changes of volume so slowly as to give the nervous filaments time to accommodate themselves to the changing relations.

It may be assumed that, when tissues affected with acute or sub-acute inflammation, pass into a state of chronic inflammation at the ordinary period of the termination of the acute disease, there must be some continued causes of irritation, or some cachexia, original or acquired, temporary or permanent, which causes the continuance of the disease in the chronic form. In this sense, there may be a constitutional disease, requiring constitutional treatment, as well as rest, of the parts affected. The cases in this class differ from those of the first class, in which there is no disease; only disproportionate development.

It is obvious that relief of the inflamed ligaments, from the strain of the weight and movements of the body, is of the first and highest importance.

Nothing can do this so effectually as the horizontal posture; but if the deformity has become constitutional, and resists the attempt to strengthen the spine by the hands of the surgeon, the curvature will never straighten itself. Force, from without, must be persistently applied by suitable apparatus.

3. A growing person, generally a girl, of lax joints and slender muscles, is restrained from the diversified movements which are so delightful to children and youth, while the desire of securing a straight spine, and slim waist, leads to the application of stays, which interfere with the free play and rocking of the vertebræ upon each other, while, from the partial disuse of the lateral muscles of the spine, they acquire a more marked degree of atrophy than the other muscles of the body; while yet a monotonous sitting posture, under restraint at school, presents the strongest temptation to rest the muscles, by permitting the weight of the head and shoulders to curve the spine, as far as the embracing stays and the ligamentous connections will per-

mit, which, by habit, will come, at length, to be always on one side in one part of the spine, and on the other side in another part.

This picture describes the muscular class of curvatures — of artificial production, caused or aggravated by the means employed to prevent or cure them.

A girl, left to choose her own amusements and occupations, never would acquire this kind of curvature. The instinct of movement would lead to diversified action of the muscles, and, on becoming fatigued, she would lie down. Rest, in the horizontal posture, would be always more grateful and more complete, than that rest of the muscles, which is secured by allowing the weight of the parts alone, to come upon the ligaments, and the surrounding artificial supports.

As far as a person can bend the spine, by a moderate effort, so far it will deviate in this kind of resting; and, coming to be habitual in one direction for each portion of the spine, the ligaments will at length elongate on one side, and shorten on the other; as in the production of deformity of other joints, until a habitual and fixed curvature is the result.

This class differs from the other two, in being the result of the vicious tastes and usages of fashionable society, or of the excessive regard for intellectual training, in disregard of the necessities of the physical constitution.

I am constrained to quote, on this subject, Dr. Beal, to show how well this it was understood, thirty or forty years ago:

"Inactivity is not alone sufficient to account for that degree of muscular debility which induces spinal deformity. In warm climates, women take less exercise than they do in this country (England), and yet, curvature of the spine is infinitely more rare in such countries than in our own. In hot climates, all people indulge more in the recumbent position; reposing themselves, when fatigued, as Nature dictates. With us, a girl, from the age of ten, is obliged, throughout the day, to maintain a constrained position of the body. She is not permitted to rest the muscles of the back, however weary, and the admonitions of parents and tutors are unceasing, to keep herself erect. In

this way, the muscles of the back are overstrained. * * * The comparative immunity of females of the higher classes in hot climates from spinal distortions, may, in part, depend upon their freedom from the pressure of stays and bandages. Mr. SHAW has some good observations on this subject:—'It is, perhaps, correct to say, that the less exercise a child takes, the more does she require general muscular relaxation in the recumbent position; and, that the lighter and more sedentary the pursuits are, the more necessity there will be either for active exercise or general relaxation. Thus, in warm climates, where active exercises cannot be taken, the due relation of parts, or balance of the system, is preserved by great indulgence in the recumbent position.'"

On the theory of exclusive muscular action, in maintaining the erect posture, a soldierly attitude should be the one which all persons would choose while standing, for the more nearly perpendicular the spine is kept, the more easily must the weight of the head and trunk be balanced. Yet this is contrary to all experience, for soldiers themselves, as soon as they are released from discipline, immediately assume attitudes in which the spine makes first one set of ligaments tense, and then the other. It is not so much to rest the muscles of the legs, that the weight of the body is thrown first upon one and then upon the other, as to rest the muscles of the spine, by throwing the burden of balancing upon the ligaments.

From all this, the indication is plain, to give the muscles variety of exercise, with frequent and abundant rest in the horizontal posture, saving the ligaments from any persistent strain, and, in confirmed cases, to strain the ligaments in the opposite direction, till they acquire equality of development on the two sides.

It used to be advised, in this class of cases, to carry a bag of sand, or other considerable weight, upon the head, to tempt the muscles to hold the spine erect, as the easiest way of sustaining the burden. If the muscles fail to appreciate this advantage, in sustaining the weight of the head and shoulders alone, it is difficult to see how they should become more shrewd,

when the weight of a bag of sand is added. The truth, probably, is, that in both cases, the muscles, as soon as they are fatigued, attempt to shirk the burden, by allowing the spine to settle to the extent of its lateral flexibility, throwing the strain upon the ligaments. Thus, the greater the weight, the greater must be the strain, and the greater the consequent yielding and gradual aggravation of the curvature.

The system of movements devised by Dr. LING, of Sweden, and, with more or less modification, taught by DIO LEWIS, and others, are well suited to prevent this class of deformities, and to correct them in their early stages. It is a happy reform, to introduce them into schools as a part of the regular daily exercises, not only for the purpose here considered, but to secure better general muscular growth, better digestion, and more balanced developments.

In unconfirmed curvature, from muscular weakness, an important means of giving vigor to the muscles, is friction upon the skin over them. The efficacy of this, in imparting muscular tone, is well enough understood by every groom, and it is a pity that it should be so much neglected in human hygiene. Once, or oftener, in the twenty-four hours, the patient should lie upon her face, with the whole length of the spine exposed, when passes should be made slowly, and with a considerable degree of pressure, from the occiput and sacrum, the passes all being toward the sacrum, and continued fifteen minutes at each period. It is convenient to practice this friction just before bedtime, for its additional effect in procuring good sleep. To give greater adhesiveness to the surface of the hand, it may be moistened with some alcoholic preparation.

4. Lateral curvature, from spasmodic action of muscles, finds its best illustration in torticollis, or wryneck, in cases of which, rigidity of the sterno-cleido-mastoid muscles is associated with spasmodic action of spinal muscles of the same side. Fortunately, the cases of curvature of this class are few, though the twisting of the neck and tilting of the head, from the action of the sterno-cleido-mastoid, are common enough.

These cases usually arise, like strabismus, from sympathetic

disturbances of nervous function, and the most successful treatment must be the early removal of the disturbing causes. The permanency of the deformity depends upon the hypertrophied and shortened condition of the muscles, after the irritating disturbances have passed away, or upon the same ligamentous condition of contracture.

Where these irritations have a hysterical character, the effects may be expected to be more transient, while contractions resulting from the reflexion of influences from sources of irritation, having a degree of permanence, must be less promising; and those resulting from irritation of the origins of the nerves in the brain or spinal cord, must be most unpromising of all.

The treatment in these cases must, obviously have reference to the removal of the irritating cause, whether acting as an incitant of hysterical perversities, by reflex influences, transferring the result of irritation from the different nerves in another situation, to the efferent nerves going to the muscles affected, or existing at the origins, or in the course of the nerves supplying the muscles which are producing the disproportionate force.

The primary treatment must evidently be medical, but the permanent results may require systematized movements and mechanical appliances, partly to assist the elongated muscles of the convex side in regaining their volume and shortening their length, and partly to tire out and lengthen the contracted muscles.

The division of the rigid muscles may be necessary. Time may be gained by this means for righting up the spine, by lateral pressure, and securing the commencement of change of nutrition of ligaments, shortening those on the convex side and lengthening those on the concave side, so that when the cicatrization of the divided muscles restores their functions, the antagonist muscles may have been developed for effectual opposition.

The results of this operation upon the spinal muscles are better explained, in many instances, by the supposition that a profound impression is produced upon the nerves analagous to that of the moxa, the actual cautery, and that of the galvanic puncture, all of which may, in some instances, be found to be

valuable remedies. This theory, however, would always lead to the employment of the latter remedies, rather than the division of the muscles. In the division of the sterno-cleido-mastoid muscle, for wryneck, however, more may be accomplished, for, by a free suppuration, a proper connecting cicatrix may be obviated, or if formed, it may be too thin to draw the two divided ends of the muscles together, especially if the antagonizing muscles are aided by appropriate apparatus.

All the other muscles concerned in producing lateral deviation of the spine must completely re-unite after division, whether the incision is open or subcutaneous; and with all these other muscles the division must prove a failure if the disproportionate contraction of the muscular fibres continues. The break in the succession of the irritation arising in the spasmodically contracted muscles, and reflected upon themselves, is an element of the rationale of success in some cases of myotomy, practiced as a remedy for muscular contraction.

Treatment of Confirmed Lateral Curvature.

The words of LIONEL J. BEALE, in his work *On Deformities*, written more than thirty years ago, are peculiarly appropriate: "The great difficulty of treating this class of spinal distortions (lateral curvature) consists in the necessity of removing the weight of the body from the vertebral column, and at the same time using such exercises as will remove the evil by strengthening the muscles. * * * * Every day's experience proves to me the utter impracticability of removing a decided lateral curvature of the spine without mechanical extension. It would be as easy to reduce a dislocation of the femur without the assistance of art, as to correct a long continued deviation of the vertebral column without extension. In the earliest stages of the malady, exercise alone will remedy the evil, but we are seldom consulted until the curvature is confirmed and permanent; that is to say, it cannot be removed by any exertion of the patient, nor does it, as in the earlier stage, disappear while the body is in exercise and the muscles in action. If a child with incipient lateral curvature be watched during the time

when she is engaged in any active and absorbing amusement, there will be no appearance of distortion, and at this period judicious management will prevent the establishment of a permanent curvature. But when the deformity has existed for a year or more, when it has become fixed in any degree, the ribs will have accommodated themselves to the deviation, and they will contribute to the maintenance of it; in these cases no variety of exercise, no kind of gymnastics, will do no more than prevent further mischief. To remove that which has become established, extension alone will be of advantage. The judicious combination of extension, exercise and repose will in time remove lateral distortions of the worst kinds, but without unremitting perseverance they will be of no avail, for it is not in a few weeks that good can be effected in such cases, months and even years are required. * * * * The time required for the cure of spinal deformities of course varies. During the period of growth, perseverance will almost invariably insure success, and if the distortion is recent the shape will be restored in a few months; but the exercises must be continued *afterwards*, to prevent a relapse. Even when the growth has ceased, if no absorption has taken place in the bones, if they have not yet been rendered cuneiform by pressure, we may sometimes succeed in removing the deformity entirely; but it is obvious, that when the osseous system is much implicated, a complete cure cannot be effected, and some degree of deformity must remain for life."

Dr. BEAL'S theory has been carried out by improvements in appliances by Dr. H. G. DAVIS, whose language in a paper published in the *Boston Medical and Surgical Journal*, vol. 46, No. 5, p 96, for March, 1852, is here quoted:—

"After several year's experience in treating curvatures by apparatus and by various modes of exercise, the conviction was forced upon me that in order to do it with any degree of assurance, it was necessary that the apparatus should be so contrived that it would not only remove the deformity, but it should at the same time leave all the muscles free to act, and the patient under the necessity of using them to balance and sup-

port the body as fully as without the aid of such appliances; also, that it should be so planned that it should effect as much during the sleeping as the waking hours, * * * * For the furtherance of the recovery the instrument should not be fixed or stationary in its adjustments, but should possess elasticity, so that if the form yields, the apparatus may follow up the change, and exert nearly as much force upon the curve as it did before it had yielded in any degree."

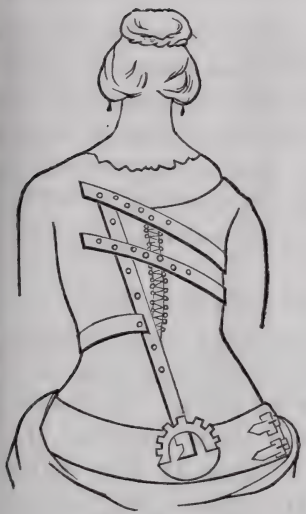
The introduction of elastic rubber was early seized upon by Dr. DAVIS, with which, in great part to meet this necessity for elasticity, to which he gave the name of "artificial muscle."

The *desirableness* of elasticity in the appliances was appreciated long ago. The late improvements have been made rather in the achievement of the desideratum than in the conception of the want. Yet, up to this time, nothing has been devised which will do away with the necessity for the horizontal position in the treatment of confirmed cases. It is indeed probable that when time enough can be devoted to a patient the hands of the operator and his assistants, with some very simple appliances, will do as well as expensive and complicated apparatus. In this direction are the "*Antiplastic*" *Movement of Werner*, (quoted from *Bauer's Lectures on Orthopedic Surgery*, *p.* 94.)

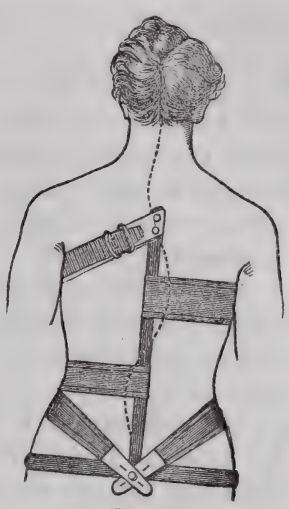
"The patient is placed upon a covered table in a dorsal position; the hands of the operator are employed to correct the deformity, and to bend the spine over in the opposite direction; and, in fine, the patient is directed to maintain the same for an hour or so at a time. Another competent person may take the place of the physician to facilitate proceedings, which should be repeated several times during each day."

Mechanical Appliances.

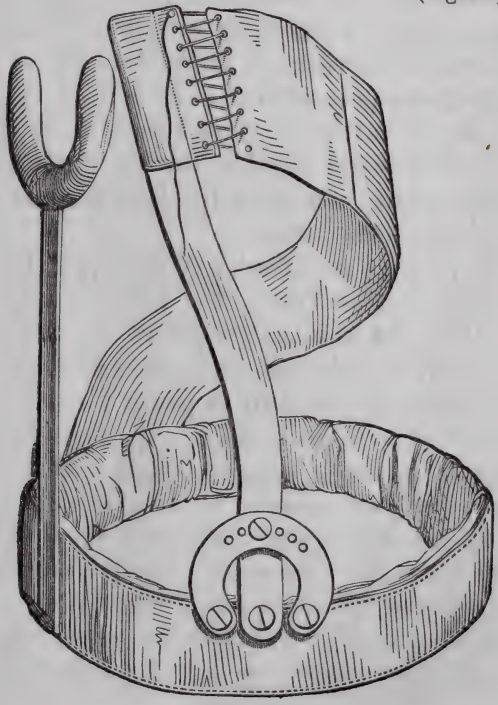
These are of two classes, those which produce direct extension, and those which act laterally upon the spinal column. The simplest of the first class is Darwin's Bed, in which the head of the bed is elevated about 12 inches, and the cap in resting the head is fastened to the headboard. The tendency of the body to slide downward makes the extension. The appliances for



(Fig. 14.)



(Fig. 16.)



(Fig. 15.)

lifting in the erect posture rest upon the pelvis, and receive the shoulders upon crutches; and where the head is to be supported a collar applies to the base of the skull and of the lower jaw. Dr. EDMUND ANDREWS, of Chicago, has published plans of apparatus upon this principle, moulding a sheet of copper over an accurate cast of the pelvis, and extending a rod up behind the spine, and by means of attachments to this rod, lifting upon the head or shoulders, or both.

See *Chicago Medical Examiner*, for September, 1863.

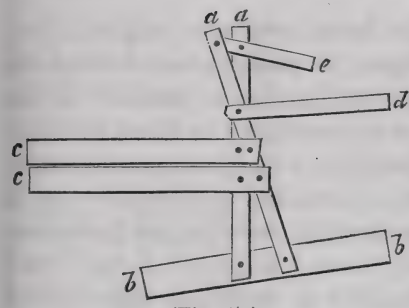
HAZZARD is said to have been the first to attempt to support the spine by apparatus fitting the trunk, and producing lateral pressure and counter-pressure, while the patient is in the erect posture and walking about. This, and the modifications of it, are now known as Tavernier's Belt. Figure 14, from BAUER, illustrates this, and also the crutch arrangement, for the direct lift from the pelvis. The principle is to apply pressure and counter-pressure upon the projecting or convex portion of the skin. The movable arrangement at the base of the upright implies that the pelvic piece is fixed in its position.

Figure 15, from TAMPLIN, is another modification of Tavernier's Belt, with the crutch added on the side of the depressed shoulder. In this plan, also, the pelvic band must be fixed in its position, to sustain the crutch.

Figure 16, shows the modification of this apparatus, by Dr. HENRY G. DAVIS, of New York. The belts are made of rubber elastic webbing, for ease and efficiency. In this plan, the pelvic band is smaller, and is not designed to give any support, but only to keep the upright shaft in proper position.

The appliances of both kinds, hitherto published, require to be made by skilful workmen, generally found only in the large cities. I have made an endeavor to devise a plan, which can be executed by any ordinary mechanic, and by any physician, who will give his time to the work. The framework of this apparatus is sufficiently illustrated by Figure 17.

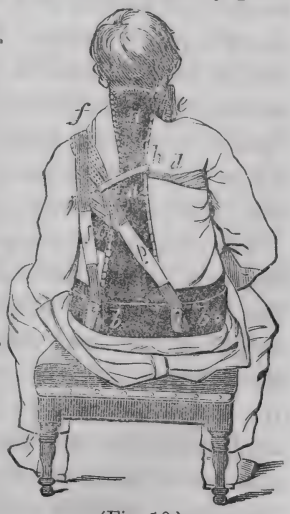
Explanation.—A metallic frame, for lateral curvature, which may be extemporized without the aid of a skilled instrument



(Fig. 17.)

maker. *a a* Two uprights of hoop iron, or, (better,) of thin steel. *b b* Base of copper, tin, or sheetiron, reaching two-thirds around the pelvis, to which the uprights are attached. *c c* Two pieces of hoop iron, or of thin steel, for the side on which the shoulder is elevated. *d* A thinner and narrower piece of steel, to pass under the armpit of the depressed shoulder. This is movable at the rivet attaching it to the uprights, and upon the distal end is attached an elastic strap, which passes up in front and over upon the prominent shoulder, and down to a buckle attached to the base *b b*, in order to make the lift under the depressed shoulder, and the weight upon the opposite elevated shoulder balance each other. *e* A strip of hoop iron (or other soft iron) to apply to the neck and base of the skull. All parts are properly padded and armed with straps and buckles.

To retain the head, after division of the sterno-cleido-mastoid muscle for wryneck, and after plastic operations upon the neck, a frame, upon the same principle, can be easily made, prolonging the uprights *a a* to pass over the top of the head, and employing two neck pieces, *d*. The uprights are made short at the lower end, so as to bring the base *b b* around the lower part of the chest. The pieces *c c* and *d* are left off for this purpose.



(Fig. 18.)

In Figure 18, the apparatus is seen applied. It will be observed that it differs from the preceding plans, in making the prominent shoulder the centre of force, and, in the erect posture, the support, also, of the weight of the apparatus.

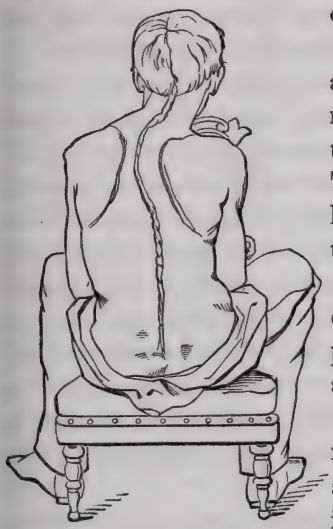
Figure 18. Apparatus for lateral curvature applied. *a a*, *b b*, *c*, *d*, *e*, The same as in Figure 17, properly bent to the form of the body and padded. *f f* An elastic strap attached to the front or distal end of the bar *d*, passing up in front, and over the opposite shoulder, overriding the loop *g*, and passing down behind to the base *b b*, where it is attached by a buckle. *g g* A loop encircling the prominent shoulder, and attached by an elastic strap to a buckle fastened to the base *b b*. *h* A small cord passing around one of the branches of the loop *g*, and attached to the upright, for the purpose of keeping the loop from slipping off the shoulder. By means of the strap *f f*, and the loop *g*, the apparatus is made self-sustaining, and it is not necessary that the base *b b* should have any nice adaptation to the pelvis.

The apparatus, as shown in the figure, is adapted to a curvature in which the left shoulder is prominent. The bar made into a hoop *c c*, and the right extremity of the pelvic base *b b*, also made into a hoop, passing around the right ilium, are intended to be nearly unyielding. The bar *d* moves with the ascent and descent of the right shoulder, and all the straps and fastenings are elastic. This is to give the muscles more freedom of motion, both for comfort and to permit that to and fro movement, which gradually secures yielding of both muscles and ligaments, without danger of inflammation or ulceration anywhere. A vastly greater amount of pressure can be borne with this yielding elasticity, than without it.

The details of the apparatus admit of a great variety of modifications, to suit different cases. If it is desirable to support the head, to give the cervical vertebræ some extension, the weight of the head may be made to apply to the projecting shoulder, through the strap *f*, and the loop *g*, which pass over it. It is believed that this plan admits of a greater variety of application than any other which has been recommended, at the same time that it can be made from the most common materials, requiring very little skill.

The employment of the best steel and the best workmanship, to make the whole apparatus light and elastic, is desirable, but not necessary to success.

Figure 19, illustrates a case belonging to the second division of the classification here adopted—lateral curvature occurring in a lad, 17 years of age, of previous good health. The deformity has been chiefly produced during the last six months, and is observed to be progressing rapidly.



(Fig. 19. Wm. Richard Gore.)

He fell from a horse, three years ago, striking upon his head, and was nearly helpless for a few days after this. This is the only known cause. There is very little deviation in the lower dorsal, and in the lumbar vertebræ. Stature 5 feet.

After ten days use of apparatus delineated in Figures 17 and 18, the patient's height had increased half an inch.

In addition to mechanical treatments, the patient takes, three times a day, a teaspoonful of syrup of iodide of iron and simple syrup.

Aug. 3*d*, 1864, (about two months from the commencement of treatment,) increase of stature since last measurement, $\frac{5}{8}$ inch—whole increase, $1\frac{1}{8}$ inch. *Nov.* 5. Additional increase of stature, $\frac{3}{8}$ inch—total increase, $1\frac{1}{2}$ inch. At this point, there seemed to be a cessation of supposed softening of bone, and a fixedness of position accrued, so that no further progress was made. The general health improved. Perhaps greater amendment of form might have been secured, by requiring the patient to keep the horizontal posture, but it seemed necessary to permit him to move about, in aid of his general health.

To the medicine, is greatly due the credit of the arrest of the softening of bone, but the mechanical support retrograded the deformity before the medicine had time to act. At a later period, the restoration of bony firmness rendered further amendment of form impossible.

C. *Antero-posterior, Vertical, or Angular Curvature.—Potts' Disease.—Kyphosis.*

This curvature depends upon disease of the bodies of the vertebræ, resulting in destruction of the substance of the bone, while the articulations maintain their integrity. As the weight of the super-imposed parts forces the adjoining surfaces of the vertebral bodies together, the spinous processes must separate and project backward, with a more or less sharp curvature.

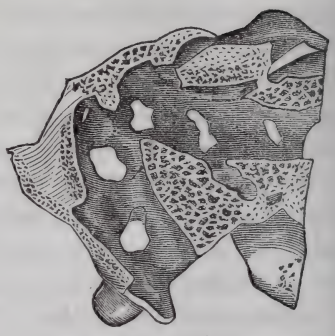
The pathology does not differ from that of inflammations and degenerations existing in other spongy bones, as chronic sequels of inflammations, following injuries, or as degenerations of spontaneous origin; the localizations of constitutional tendencies, directed to this seat by any cause diminishing the proportionate vigor of nutrition of the spinal bones. The freedom from acute pain, probably, depends upon the low grade of inflammation giving time for a slight expansion of tissue, to accommodate the increased amount of blood, and saving those nervous extremities from distention, which, when irritated, are susceptible to painful impressions. A dull, ill-defined, aching sensation, instead of an acute pain, usually attends the early history of the cases.

A careful step to avoid jars of the body, and a slightly stooping posture, with a disposition to brace up the trunk by placing the hands upon the thighs, and a careful avoidance of all those attitudes which bring increased weight upon the bodies of the vertebræ, are characteristics which mark the progress of the disease. In picking up objects on the floor, the patient carries his hand to the floor by flexing the hip and knee-joints, holding the spine stiff and nearly erect; a movement so contrary to that of persons with healthy spine as to attract attention. Rheumatism may occasion constraints of movements very similar, and hence a particular caution is necessary in distinguishing osteitis of the vertebræ, until the persistence of the symptoms renders the diagnosis plain.

From the movements of the patient, we may see that there is an effort to save the vertebræ from pressure, though the sensations are so diffuse that the patient is not aware of the seat of the uneasiness; those startings and spasmodic muscular contractions which attend inflammation of bones adjoining more

moveable joints, are usually absent, owing to the absence of the friction of rough surfaces, such as apply to each other in destructive inflammations of the knee and hip-joints. The patient is able to save the bodies of the vertebræ and the intervertebral cartilages from pressure while in the erect posture, by active contraction of the erecting muscles of the spine attached to the spinous processes, but they soon tire out and yield to the tendency of the spine to curve, just as muscles elsewhere yield to an overcoming force applied by extending apparatus. This yielding becomes habitual and permanent with increased length of muscles. As this process goes on, the *ligamenta subflava* connecting the arches of the verterbræ become permanently elongated by change in nutrition, while the articulating process assume new relations with each other. An abrupt projection thus occurs in marked contrast with the curves of the lateral deviations. No tenderness on pressure usually attends this process of destruction, as the diseased parts are beyond the limit of the influence of pressure upon the spinous processes, upon the ribs, or upon the adjacent muscles. The amount of destruction of bone is truly astonishing; the bodies of several vertebræ in some instances disappearing. A striking case of this kind is given in *Cruventhier's Pathological Plates*, 4th livraison, plate 4, in which there was a loss of the bodies of five vertebræ, the 5th and 11th dorsal vertebræ coming in contact by their anterior surfaces, the spinal canal making an acute angle, without the occurrence of paralysis at any time. The illustration of this case is copied in figures 20 and 22.

(Fig. 20.)



(Fig. 21.)

"The individual to whom this specimen belonged was not paraplegic, although the angle was so acute, but the pressure of the spinal marrow was probably prevented by the meeting of the 11th with 5th dorsal vertebræ, which furnished a groove for the reception of the 11th. The bodies of the 6th, 7th, 8th, 9th, and 10th dorsal vertebræ have almost entirely disappeared, their confused remains forming a mass covered with oseous vegetations. The foramina were all preserved, but deformed and diminished in size. The spinous processes corresponding to the last vertebræ had undergone a remarkable deviation; instead of projecting more than usual, they were much inclined and even slightly curved so as entirely to fill up the interval which separated the 8th from the 9th, and the 9th from the 10th dorsal vertebræ and to complete posteriorly the medullary canal. The manner in which Nature had preserved the spinal canal in the midst of such devastation is remarkable. The vertebral column having been sawed lengthwise we see (Fig. 21) with what apparent art the canal had been protected."

The occurrence of pressure upon the spinal cord is obviated by the slowness of the changes and the ultimate incasing of the cord by new bony material coincident with the anchylosis of adjoining vertebræ, except in those cases in which the weakened bony substances are fractured by the weight of the parts sustained, or by some movement or force suddenly applied greater than the vertebræ can endure. By this sudden fracture, the spinal cord may become compressed by the fragments and paralysis ensue. By the absorption or disintegration of these, or by their change of position through extension acting through the spinal column, the pressure may disappear, or through failure of these the pressure and attending palsy may be permanent. The duration of the disease from its incipiency

to the termination by anchylosis is measured by years. During the period of aggravation pus may form and accumulate in such quantity as to burrow through the adherent pleuræ into the lungs or along the fasciæ of the muscles into the lumbar region, or along the psoas muscle into the groin. Cases, however, may doubtless be cut short previous to the suppurating stage, while little or no deformity has ensued, as in similar inflammations in other cancillous bones. It may not then be apparent to the patient or friends, or even to the physician, what is the magnitude of the evil cut short.

There is a doubt thrown upon the efficacy of treatment in this and other diseases pursuing such a protracted course, because the disease does not at once begin obviously to ameliorate upon the institution of treatment. From analogy and experience, however, the following indications may be safely affirmed:

1. The disease, except when it is tubercular or a cancerous degeneration, has an acute stage in which the treatment must be like that in the acute stage of other diseases of general low grade. This element of treatment is important before the bony substance is so absorbed or disintegrated that the pressure of the weight of the parts above in the erect posture can have any important influence. Whether the morbid processes have their origin in an injury or in some obscure constitutional influence localizing itself in the spine by an accidental selection, the case should be treated on the same principles as strumuous inflammation in the eye. General heroic treatment cannot be borne, but active purgation once a week, cleaning out the colon and stimulating the liver and other alimentary glands, creating an appetite and giving a healthier hue to the surface, will constitute an important element in the treatment. Mercury is not an indispensable element in the purge, but it certainly adds very much to its efficacy. A grain of calomel for a child 5 or six years old, taken at night, and followed in the morning with an efficient senna draught, may be mentioned as an appropriate purge. The mercurial may, for convenience, be combined with a sixteenth of a grain of tartar emetic, two grains of

leptandsin, and two grains of sugar, for a patient of this age. Where the mercury is omitted, two grains of leptandsin may be given at night, followed by castor oil in the morning. Should there be considerable febrile excitement, the force of the circulation may be diminished by small and frequently repeated doses of tartar emetic, or in more active cases, veratrum viride. This element of treatment may be expected to be of most efficacy while the diagnosis is obscure, the disease being suspected by the gait and posture of the patient, before any deformity is manifest. It may be said in favor of the treatment that if the diagnosis is wrong the remedies are equally appropriate for the rheumatic stiffness which simulates the spinal disease.

2. Following this class of remedies, or in connection with them, the employment of iron and iodine, with or without other tonics, may be expected to have an important influence in overcoming the constitutional perversion upon which the perpetuation of the local disease so much depends. The syrup of iodide of iron, of the U. S. Pharmacopœia, in doses of fifteen drops three times a day, for a child six years old, may be instanced as a convenient and efficient form of prescription. It is important to insist, that when there is any fulness of bloodvessels felt in the pulse, or seen in the capilliaries of the surface, this class of remedies should be preceded or accompanied by a proper eliminative treatment. It is feared that the present prevalence of the humoral pathology in medical theories, too often leads to a neglect of this important principle of treatment to prepare the system for the absorption or tolerance of iron tonics.

3. Local remedies; cupping and leeching, emollient applications, the most convenient of which is a damp towel persistently worn over the spine, and moistened as often as it dries, slightly to reduce the temperature of the skin, and to soothe the nervous extremities. This may be supposed to act chiefly by reflex influence, being applied to nerves having origins near to the origins of those going to the diseased parts, or identical with them. Blisters, moxas, and canteries, however, if employed in this stage, should be applied at a distance, so as not

to excite an increased sympathetic activity in the diseased parts. It is not impossible that the disrepute into which these last remedies have fallen is owing to the disregard of this therapeutic principle by the old surgeons, who applied these remedies too indiscriminately. Observing their efficacy in the later stages of the disease in which spasmodic and painful muscular action had been sympathetically produced by irritation of the nerves of the diseased tissues. A hasty generalization may have led to their too early employment and to their application too near the diseased tissues. It is hardly possible that their employment should have been an entire mistake. The extent to which Brown-Séquard has insisted upon this latter point will doubtless have a controlling influence upon future practice. A practical question will often arise, whether a purulent accumulation in the groin, or elsewhere, should be opened? The elements of the answer to this question may be thus stated:

Pus enclosed in the tissues and kept from exposure to the air, whether in large quantities or small, is capable of maintaining its original composition for a long period, and of being finally absorbed. Undecomposed pus is unirritating to the tissues, does not interfere with healing processes in contact with it, and travels chiefly by the pressure of its own weight, or of its bulk when in too confined a space, as in phlegmonous diseases, in which pus rapidly accumulates. The presence of undecomposed pus, therefore, will neither aggravate the disease nor prevent the healing of the abraded surfaces of bone and cartilage. On the other hand, the complete evacuation of the pus is impracticable in consequence of the tortuousness of the passages or the formation of pockets from which the pus can only be slowly drained by position. The admission of air to a portion of the pus within the tissues, sets to work a process of decomposition which gradually communicates to the whole. This inflames the interior of the pus-holding sack, and the tissues originally diseased may take on an aggravated form of inflammation from this new source of irritation. The attempt to evacuate the pus through a tube ending under fluid can never evacuate the less liquid portions of the pus which are liable to block up the tube,

and if successful in avoiding the introduction of air into the cavity, the wound must heal by the first intention, to avoid the unwelcome result of decomposition of pus and consequent irritation. If an opening has spontaneously formed into the air-passages of the lungs, or in any inconvenient location, the case can be no worse by the making of a free opening in the most dependent position, the latter to drain the parts, and when there is an opening into the lungs, to save the air-passage from the burden of this discharge. The introduction of local medicines by injecting them into the purulent cavity, other than disinfectants, promises too little to encourage the practice.

After the formation of pus has ceased in the progress of restoration, and after the parts originally diseased are well covered by granulations, reducing the case to the condition of an ordinary chronic abscess, a state of things indicated by the greatly improved state of the patient, and the increased strength of his back, there can be no more objection to the evacuation of the pus than in an ordinary chronic abscess.

4. Quiet of the general system by confinement, chiefly in the horizontal posture, is of greater importance than parents can easily appreciate, both for obviating the general arterial excitement upon which the activity of the local disease in part depends, and for relieving the diseased parts from any functional action in sustaining the weight of the body. Whatever objections may be urged against the observance of the horizontal posture in the later stages of the disease, in the period of wasting from suppuration, and in that of repair and progressing anchylosis, none can be urged on therapeutical grounds against the observance of rest and posture during the early period of subacute excitement, while tonics cannot be borne unless preceded by eliminants. Indeed, it is probable that if this indication could be properly appreciated by parents and physicians in the forming period of the disease, vast numbers of cases would recover without proceeding so far as to afford a clear diagnosis, and of course without any deformity.

5. Artificial support of the diseased vertebræ, taking off the pressure upon the bodies, and obviating the strain upon the

muscles and ligaments attached to the spinous processes and arches of the vertebræ, is seen at a glance to be theoretically correct. So far as the disintegration of bone and intervertebral cartilage may depend upon pressure, the relief of this pressure becomes an important element of treatment. The older orthopedists attempted to meet this indication by direct extension upon the spinal column, by support applied to the base of the skull, for disease of the cervical and upper dorsal vertebræ; and for the middle and lower dorsal and the lumbar vertebræ, by crutches resting under the armpits, and attached below to a metalic support resting upon the crests of the iliac bones, properly padded and retained by a strap passing across the abdomen. It is believed that Dr. HENRY G. DAVIS, of N.Y., is the first to have employed the vertebral column itself as a lever to straighten it or to keep it straight in Potts' disease; relying upon the articular processes as fulcroms upon which the force of the extension comes. This expedient of treatment is founded upon the law of the disease to affect the bodies of the vertebræ, and to leave the arches, articulating surfaces, and processes untouched. The principle of treatment is that of a splint applied to the back of the spine to keep it from bending, and to force the weight of the parts above upon the articulating processes.

In the No. of the *Boston Medical and Surgical Journal* for August 4th, 1852, Dr. DAVIS, at the close of an article on lateral curvature, refers to an apparatus for Potts' disease, having then employed it for three years. In the *American Medical Monthly* for 1856, vol. 5, *p.* 212, &c., Dr. D., in speaking of the difficulties in adapting remedies for Potts' disease, remarks: "The common mode of constructing apparatus to sustain the weight of the body upon crutches is utterly useless. * * * The bodies (of the vertebræ) and the oblique processes afford the only perpendicular support. The distortion is produced by the removal of the bodies of the vertebræ by ulceration. As the line of perpendicular support falls between the bodies and the articulations of the oblique processes; the weight of the trunk above approximates the bodies of the two adjoining verte-

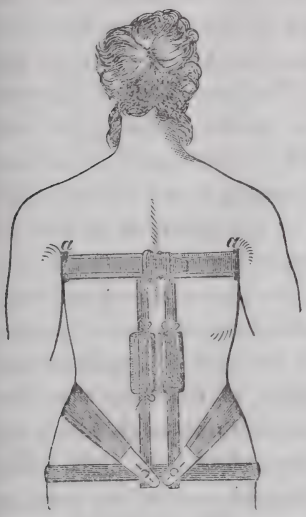
bræ, as the diseased one is removed by absorption; the oblique processes now sustaining the weight of the trunk act as fulcrums upon which the vertebræ are tilted or rotated; thus, the spinous processes above and below are separated from that of the diseased vertebræ, the articulations of the oblique processes being the centres of motion. It is this form of the vertebræ which enables us to make use of the whole vertrebral column as a lever to restore it. By apparatus we are enabled to throw the entire weight of the superincumbent body upon the oblique processes, and at the same time separate the bodies of the vertebræ adjoining the diseased one from it, the contact of which is constantly irritating and producing absorption. * * * The same principle of treatment, viz.: the separating of the diseased surfaces, and removing from them all irritation from pressure, is equally applicable to diseases of the hip-joint."

These quotations are made to this extent not only to vindicate American Surgery against foreign claims, but to secure the honor of originality to whom it rightfully belongs among Americans.

In the *Transactions of the New York State Medical Society* for 1853, is an article by Dr. C. F. TAYLOR, of N.Y., upon "The Mechanical Treatment of Angular Curvature," &c., which has been reprinted in a pamphlet of 48 pages by Bailliere Bro's, in which Dr. TAYLOR claims that he is the inventor of the only method which does not rely upon crutches to support the body in Potts' disease. From a letter from Dr. TAYLOR himself, we learn that his own apparatus was invented in 1859. This is several years after Dr. DAVIS had employed his apparatus. The latter has no hinge, and secures itself above by pressure upon the sternum and clavicle; while TAYLOR'S apparatus makes fast to the shoulders by bands which encircle them, one on each side.

The hinges in Dr. TAYLOR'S apparatus must certainly be useless complications of machinery, for the very object of the apparatus is to obviate movements of the vertebræ upon each other, and not to make special provision for motion. The elasticity of the material affords all the motion which should be per-

mitted. In theory, it would be correct to abolish all motion of the affected portion of the spine.*



(Fig. 22.)

Figure 22. Apparatus of Dr. H. G. DAVIS, for vertical curvature, arranged for disease of the lower dorsal, or upper lumbar vertebræ.

Dr. LOUIS BAUER, of Brooklyn, has constructed a modification of this apparatus, which he calls a cuirass. It is made of woven iron wire, by fashioning it upon a plaster cast, and encircling its borders with an iron rod or wire, of sufficient firmness to resist any force likely to be applied to it. The fastening above, is by bands around the shoulders, and below, by a band across the hypogastrium. On either side are leather handles, for the purpose of carrying a smaller patient invested with this covering, like transporting a turtle on his back.

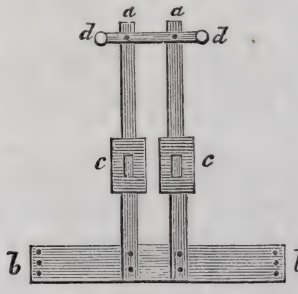
The apparatus is made like the "wire breeches" of the same inventor, and, when made a good fit, it must answer the purpose admirably.

It is a desideratum, to have a plan which can be executed anywhere, away from mechanics especially skilled in the making of such appliances. To this end, let a strip of hoop iron be cut, of sufficient length to extend along one side of the spine, and another like it, to extend parallel with it along the other side,

* The following advertisement has appeared in the advertising department of several medical journals:—

"The Mechanical Treatment of Angular Curvature, or Potts' Disease of the Spine. This new method of treatment, first brought before the profession through the *Transactions of the Medical Society of the State of New York*, and attended with such marked success, is here offered in pamphlet form, convenient for transmission through the post. Price 35 cents. BAILLIERE BRO'S, 520 Broadway, New York."

to be separated, so that the spinous processes shall be free from pressure. Let the lower ends of these strips be riveted to a wider strip, which may be made of tin, to encircle one-half the body, passing across the upper part of the sacrum and iliac bones. A broad strap, to fasten with a buckle, is to invest this piece of tin and encircle the body. The lower ends of the vertical strips are thus held fast to the pelvis. The upper ends are to have a short cross-piece riveted to them, with an attachment at each end, for a padded strap going round the shoulder, with a short elastic at its fastening to the splint, to relieve the shoulder of the discomfort of an unyielding constraint, as employed by Drs. TAYLOR and BAUER, or the strips may be originally cut longer, so as to be bent in the form of a hook, passing over the clavicles in front. To give breadth of application to the ribs, let a piece of tin or sheetiron, of sufficient size, one for each side, receive two transverse slits, through which the vertical strip is passed, before it is riveted at both ends. The proper form of this metallic splint may be secured by bending it across the knee, and ample padding should shield thinly covered projecting bones from pressure.



(Fig. 23.)

Plan for an iron framework for apparatus for vertical or angular curvature (Potts' Disease).

a a Two parallel uprights. *b b* Base to apply to the pasterior half of the pelvis. *c c* Plates of sheet-iron, or thick tin, to be padded, to apply on either side of the affected portion of the spine. They can be made to slide upon the uprights till they come to the proper place. *d d* Upper cross-piece, to each end of which is attached a loop, well padded, to encircle the shoulder. As neither elasticity nor any other motion is desirable, the uprights should be made of soft iron, in order to be easily adapted to the shape of the trunk, and of sufficient bulk not to yield to the tendency of the trunk to bend forward.

If the disease is in the upper dorsal vertebræ, it may be bet-

ter to make the uprights *a a* long at the top, to bend over in front of the clavicles, in the form of hooks.

If the disease is in the cervical vertebræ, the plan will do better, which is recommended for lateral curvature, crossing the uprights opposite the neck, and supporting the head by a cross-piece which passes under the mastoid processes and lower jaw. (See Figure 17.)

If the disease is in the sacrum or lumbar vertebræ, it is doubtful whether any expedient but the horizontal posture will obviate deformity.

It is believed that, for efficiency, a homemade apparatus fashioned in this manner, may be equal to a more costly one. To bring the means of treatment within the reach of all, is the desideratum.

For disease of the lower lumbar vertebræ this apparatus is inapplicable, and one that directly lifts, like that of Dr. ANDREWS, of Chicago, can do but little good, on account of the impossibility of avoiding the disposition of the spine to bend forward. The difficulty is to extend the lower end of the lever sufficiently below the diseased bones, to prevent the inclination of the body to bend forward. Anchylosis of the hip-joints would afford the desired condition. A mere lift acts upon the bodies of the lumbar vertebræ at too great mechanical disadvantage. Nothing remains but the horizontal posture.

For disease of the cervical vertebræ, the upper end of the apparatus must take hold of the head. The most feasible plan for this purpose, is to employ strips of iron, as elsewhere explained, for lateral curvature, (Fig. 17,) crossing them between the shoulders, like shears, so that rests may be fastened to their upper extremities, to support the head and face. The constraint of movement may be very undesirable, but, for a patient that cannot otherwise hold his head up, it may be a very acceptable relief, as well as an efficient therapeutic agent. In this case, it is practicable to rest the weight of the head partly or entirely upon the shoulders of the patient, rendering it unnecessary that the apparatus should extend farther down than is necessary to give firmness of support to the splint employed as a lever.

6. Finally, the question arises as to the time, and the degree of exercise, and of food, whether the good effect of exercise on the general health will balance the local irritation from the unavoidable jar and friction of the diseased parts. The question is nearly answered by what has already been said. In the acute stage, and while the abortion of the disease is possible, quiet is desirable for its effect on the general circulation, as well as the avoidance of local irritation. Later exercise would be desirable for the general health, while it must be destructive by aggravating the local disease, and, through this irritation, increasing the general irritative fever. The extent to which the spine may be supported by apparatus, will then determine the propriety of exercise in the erect posture. Still later, when the destructive processes have ceased and the reparative processes have commenced, there is great need of the invigoration of exercise and open air, with the amusement of the senses by changing scenes, but, without adequate support to the spine, there is the greatest danger of breaking down the weakened column and exciting the inflammation afresh, or producing a palsy, by the pressure of the fragments upon the spinal cord. Here, no little value of a splint is the safety afforded, while the general health is invigorated by exercise in the erect posture and in the open air. Without this protection, the exercise, indoors or out, should be limited to such movements as can be executed in the horizontal posture, until, by cautious trials, it is found that the patient can endure shocks without uneasiness, and refrains from supporting the trunk by placing his hands upon his thighs.

The question of food is more simple, because the exercise of the gastric function produces no jar or friction of the parts diseased. During febrile excitement, food must be abstained from, simply because it cannot be retained and assimilated, as in a similar general state from any other local disease, but, as soon as the effects of eliminating medicine, rest, and the recuperative tendency render digestion possible, the introduction of nourishment is of the greatest importance, for a well-supplied nutrition is one of the most effective regulators of movements, perturbed

by the unbalancing influences of inanition. Thus, a judicious succession or alternation of medication and diet may do what neither could accomplish alone. The power of the digestive organs must always be regarded, so that hardly any other rules can be given, than the regularity of meals and the avoidance of too long fasting. To this end, a cracker or a piece of bread at bedtime, may conserve the powers and render the breakfast more easily digested, than would be the case after twelve hours fasting.

The temporary use of alcoholic stimulants, to excite the gastric glands by direct stimulus, or through the excitement of the brain, may often be extremely useful, but the permanent employment of any of their forms, as elements of diet, could not be productive of any but pernicious effects.

D. *Strabismus.* In aggravated cases of strabismus, the division of the contracted muscles is usually satisfactory in its result, because, if it fails of complete restoration, it is at least an improvement on the previous condition. In some cases, more frequently in the less aggravated degrees of deformity, notwithstanding the greatest care, the deviation is overcorrected, and the pupil turns too far in the opposite direction. In other parts this result is never to be feared, because there are ready means of retaining the parts in any desired position, but in the eye there is no such means short of a suture in the conjunctiva. Great care in avoiding unnecessary division of areolar tissue, renders this overcorrection rare, but then, the frequency of failure of sufficient correction, and a necessity for a repetition of the operation have greatly reduced the favor in which this operation was held soon after its introduction by Stromeyer and Dieffenbach in 1838 and 39.

The success recently attending attempts to change the contracting distances of the internal and external recti muscles render it probable that the expedient of dividing the muscles will be reserved for those cases which resist the treatment by *exercise.*

Exercise of the muscles of each eye separately, in order to give

the muscles varied capabilities, elongating shortened muscles, and contracting lengthened ones.

This is most conveniently done by placing before the eyes a pastboard blind with large orifices opposite each eye. Across each of these orifices a slide, having a smaller orifice in it, is so placed that it may be readily moved from or towards the centre. Where only one eye is ordinarily employed in vision, the orifice over the best eye is entirely closed and the slide over the other is so moved that the poorest eye can only see by an extreme abduction. The exercise in reading and looking at various objects is continued until the discomfort becomes intolerable, and repeated several times a day until the contracted muscles acquire the power of elongation, and the elongated muscles the capability of contracting to a shorter length. It is difficult, if not impracticable, by this expedient to exercise the two eyes at the same time. It may be a useful preparation for the correct association of the two eyes, in looking at objects unaided by refracting medea, or by the aid of prisms which tend to produce double vision, tempting the patient to invert or to evert the pupils to avoid the appearance of two objects. The bases of the prisms placed toward the nose will tempt the patient to invert the pupils, and the bases toward the cheeks will make a temptation to evert the pupils, separating them wider apart.

Stereoscope.

In the *Philadelphia Medical News and Library*, for November, 1864, copied from the *London Medical Times and Gazette*, September 24, 1864, is a very brief reference to some experiments of Mons. JAVAL, of Paris, related in a Congress of Ophthalmologists at Heidelberg, in September, 1864, *in the use of the Stereoscope in correcting convergent squint.* The method consists in placing upon a card, cut of the ordinary size of those upon which stereoscopic pictures are placed, two slides (like a strip of paper around a package of envelopes) upon each of which a wafer is attached, both being at the same height upon the slides. This card, thus supplied with its wafers, is then placed in the position the picture is intended to occupy. For

convergent strabismus the slides should be separated until two slides and two wafers are seen. Then by steadily looking through the prisms, the pupils diverge and the two images fuse into one. By the prolonged and frequently repeated exercise of the muscles of the eyes in this manner the parallelism is expected gradually to be regained.

Plane Prisms.

In *Braithwaite's Retrospect, No.* 50, *January*, 1865, *Am-Ed., p.* 158, is an article by ERNEST HART, Ophthalmic Surgeon to St. Mary's Hospital, London, copied from the *Lancet*, July 30, 1864, in which he gives an account of *the use of plane prisms* in correcting the deviation of the eyes in strabismus. He relates cases of succcess, and explains the result as owing to the effort to change the direction of the affected eye to avoid the double images which the prisms tend to produce. The principle is that of the stereoscope which causes two images to appear from a single central object, and a single image to appear from two objects placed at the proper distance from each other, and seen with both eyes at the same time. It is the effort of the muscles of the eyes so to direct the pupils that these double images may be avoided, which accustoms the shortened muscle to act in longer distances, and the elongated muscle to act in shorter distances, which by degrees secures a restoration of the proper parallelism of the eyes. The bases of the prisms are placed opposite the direction of the squint. So, for convergent squint or cross-eye the prism would be arranged as they are in the stereoscope, and in divergent squint in the opposite direction. The angles of the prism are made to vary according to the effects desired, using those of 4, 6, 8, 10, and 12 degrees, employing for constant use those of the degrees which only double the images at considerable distances.

Cases which are extreme are to be treated by division of the shortened muscles, and those which are sympathetic of still existing irritation or inflammation are to be reserved for treatment after the central or reflex irritation has subsided.

The treatment of strabismus without operation is in its exper-

imental period, and all that is here attempted is to state the progress of experiment.

Editorial.

EXPLANATION.—To prevent the necessity of dividing the valuable report of Dr. PRINCE, we have added 48 pages to the present number of the EXAMINER, and thereby included it entire in this issue. We have several communications on hand, which will appear in the next number, together with the usual notices of new books.

SURGEONS FOR THE ARMY.—In the July number of the EXAMINER, was a notice from Surgeon WOODWORTH, at Louisville, Ky., asking for assistant-surgeons, to be employed by contract. Owing to orders from the War Department, making changes in the number and location of the soldiers in that district, the notice has been recalled, there being no further need of assistance in that quarter at present.

IMMORAL MEDICAL ADVERTISEMENTS.—We have just received the Proceedings of a recent meeting of the Fox River Valley Medical Association, and insert them below. The preamble and resolutions in relation to the criminality of a certain species of newspaper advertisements, we fully approve.

We know of no more monstrous system of public swindling on the one hand, and of pandering to vice on the other, than is practiced by newspaper proprietors, in publishing pretended preventives of pregnancy, cures for *private* diseases, and whole columns of obscene advertisements about Quacks who pretend to cure venereal diseases. That the proprietors of newspapers are *particeps criminis*, and morally responsible for all the consequences resulting from such advertisements, is too obvious to every intelligent mind, to need either argument or illustration.

PROCEEDINGS OF THE FOX RIVER VALLEY MEDICAL ASSOCIATION.

The Association met in the Common Council Room, in the city of Elgin, on Monday afternoon, July 3d, 1865.

The President, Dr Tefft, in the chair.

Present Drs. Tefft, Howell, Burdick, Woodworth, Tyler, Jassoy, Bartels, Hawley, Eddy, Reed, and Young.

Minutes of last meeting read and approved.

Dr. Howell proposed Dr. John Jassoy for membership.

On motion of Dr. Young, Dr. Jassoy was elected, when he came forward, paid the admission fee, signed the Constitution, and duly became a member of the Association.

Dr. Hawley announced that the Chicago *Republican* refused to publish *criminal* quack advertisements, and that the Ohio State Medical Association had passed resolutions commending its course, and moved that a committee be appointed by the chair to draft resolutions expressive of the sense of this Association. The President appointed Drs. Hawley, Howell, and Woodworth such committee.

Dr. Tefft read an interesting paper giving an account of a case of cancer of the stomach that had occurred in his practice recently.

Dr. Burdick reported a case of malignant tumor of the jaw that was successfully removed by an operation.

Dr. Young reported an interesting case of abscess of the lungs, in a child. The child recovered after a protracted illness.

Dr. Tefft presented a patient with inflammation and swelling of the inferior extremities of long standing. Quite a discussion ensued as to the pathology of the case, which was participated in by Drs. Howell, Jassoy, Tefft, Hawley, Tyler, and Young.

The committee on resolutions reported as follows:—

Whereas, The admission by the public press of advertisements of an immoral character, inviting the commission of crime by producing abortion and preventing pregnancy, for a consideration, in the shape of pills, potions, drops, etc., is terribly demoralizing and destructive of health and life, we therefore hail

with pleasure the promise of the Chicago *Republican* that they will not admit advertisements of that character into their paper; therefore,—

Resolved, That the moral integrity and noble stand of its proprietors in excluding this class of advertisements from its columns, merits our highest approbation, and we hereby pledge ourselves to take and recommend only such papers as best conform with the principles of morality on this subject, believing that we, as guardians of the public health and conservators of public morals, cannot too strongly reprobate the publication in religious papers of advertisements, (for money,) the object of which is clearly the prevention of pregnancy or the commission of child murder, to commit crime, pander to lust, and that too frequently at the expence of the lives of the mothers, as well as their offspring.

Resolved, That the wide spread influence of a certain looseness of sentiment on this subject should be matter of great alarm to the philanthropic physician, as well as the parent, and that every public print that will pander to this species of crime is wickedly suicidal of the best interest of our race, and unworthy to be received into family circles or the patronage of honest men.

Resolved, That we deem those druggists who advertise and sell such preparations as *particeps criminis;* we hereby earnestly recommend them to discard them from their stocks and refuse to furnish them.

The report was accepted and adopted, and the Secretary instructed to publish them in the Chicago Medical Journals, Chicago *Republican*, and Aurora *Beacon*.

Dr. Burdick moved that a vote of thanks be tendered the proprietors of the Aurora *Beacon* for their generosity and promptness in publishing the proceedings of our Association. The resolution was adopted unanimously.

On motion of Dr. Burdick, the Association adjourned to meet in the Common Council Room in the city of Aurora, on the first Monday of October next, at 1 o'clock, p.m.

JOS. TEFFT, M.D., Pres.

D. W. Young, M.D., Sec.

LETTER FROM PROF. JOHNSON.

PARIS, June 15, 1865.

DEAR DOCTOR:—I have for more than two months been in Italy, enjoying its natural beauty, its rich treasures of art, and becoming, to some extent, acquainted with the state of medical science and practice in this land of wonders.

Among the ancient statuary, I have looked with especial satisfaction upon the divine Esculapius, and the busts of Hippocrates and Galen. Esculapius, indeed, is among the most common of ancient statues, and is always represented with a dignity of form, and a benevolence and intelligence of expression, clearly indicating the public respect for the art over which he presided. Indeed, the statues of Jupiter and Esculapius more nearly resemble each other than any two sculptures with which I am acquainted. The heads of Hippocrates all have the same general expression; the features all indicate, in a remarkable degree, intelligence, candor, and benevolence; the face, though in stone, reveals a heart warm and gentle, one that a child might love, and that a philosopher must respect. The busts are, most likely, all copies of some older original, and, perhaps, a faithful portrait.

At Rome, I visited what was once the home of Galen. In the evening twilight I walked along the *via sacra*, and, between the capitol and the colosseum, stood before the shrine that, for 1400 years, gave law and authority to medicine. I looked up and down the deserted street, along which the ancient Romans, with trembling steps, crowded to his doorway. On either hand, temples in ruins; behind me, the prostrate columns of the Roman forum, and, still farther, the palaces of the Cæsars, a shapeless mass, from which the owl was gloomily calling to the ghosts of the dead old years; all around me, grinning skeletons with which time has made sad havoc, bones broken, parts lost, symmetry destroyed—death, ruin, forgetfulness. The great man, however, who lived here in the days of Rome's glory, when all was beautiful and grand, did something better than to build palaces of stone, he brought to light great truths more

imperishable than marble, and out of them constructed a temple, whose altars are still beaming and burning with the fires of science and the light of human sympathy and charity. The very bust of Galen beams with intellectual life and vigor, with, perhaps, less benevolence than Hippocrates, there is in the features something more suggestive of creation, of invention, of theory. One would say that the Greek was, perhaps, the best observer, and was satisfied with what he saw, while the Roman was the most scientific, constantly asking for the causes of things.

While at Naples, I visited Pompeii and the *Museo Internazional*, which contains, among many other objects illustrating the daily life of the ancient Romans, the remains of an apothecary's shop, and a large number of surgical instruments. I noticed *probes, forceps, sounds, catheters, scalpels, and a speculum ani, and a speculum uteri*, these last not unlike those in use at the present day. Among the frescoes of Pompeii, is a group representing a surgeon closing with stitches a large wound. The incision is over the region of the femoral artery. The patient is standing, the mouth firmly closed, the features indicating suffering and resignation. The wife looks on with anxious sympathy, while a child, of apparently a dozen years, is clinging to the father's hand in an agony of grief. The surgeon, in a half kneeling posture, is holding the needle with the forceps. The expression of his countenance is calm, confident, and intelligent, at once commanding respect. The whole painting is excellently well-preserved.

In my wanderings in Italy I visited Pisa, and Padua, and Bologna, so intimately associated with the revival of medical studies after the long night of ages. It was at Bologna, as you will remember, that anatomy was first taught practically. It was there also, that Galvani, in 1789, discovered that form of electricity that bears his name.

At Florence, I saw the celebrated Museum of Natural History. The illustrations of comparative and human anatomy are especially valuable. I visited, also, the hospital of *St. Maria Nuova.* This institution contains 1000 beds, and is open to all classes, to the poor, gratis, while there are rooms for those who

are able to pay, varying in price from two to forty francs a week. *Post mortem* examinations are practiced, and the material for the study of normal and pathological anatomy is abundant. The medical department of the University of Pisa is located at Florence, and is connected with this hospital. The anatomical museum, though not large, is valuable. Among its curiosities are the preparations made by Segate, and described by an American surgeon as petrifactions. The skin is very perfectly preserved, retaining nearly its natural color; other tissues are somewhat changed, but do not decay. There is, in the museum, a table, in mosaic, made of the tissues of the different organs, such as the liver, lungs, kidneys, spleen, &c. The process seems to have been rather a *cornification* than a *petrifaction*. The art was a secret, and perished with the discoverer. The rooms for the accommodation of the medical school are in the hospital building, and would, with us, be considered shabby. The means of teaching, however, are excellent, and the curriculum of study very full and extensive. The doctorate is reached after seven years pupilage, five of which may be spent at Pisa, in the study of the more fundamental branches, and two in the hospital at Florence. The medical department has ten professors, and instruction is given throughout the year. I called on Prof. Felippo Pacini, the celebrated anatomist. He is a noble looking man, perhaps fifty years old, and an untiring student. I found him in his study, with his microscope, at work over a pathological specimen. He spoke kindly of America, asked after our scientific men, and expressed a sympathy with us in our political struggles, and especially in our national bereavement. He has a very valuable cabinet of microscopic specimens, and, as a souvenir of our interview, gave one of his preparations.

There are several medical schools in the Italian kingdom, and one at Rome. There are also many ripe scholars and men of fine scientific attainments, and yet, from all I can learn, I am satisfied that the *practice* of medicine and surgery is inferior to that of Northern Europe or America. There is a wonderful respect here for authority. The skeleton hands of the dead old

masters still write prescriptions for Italian women and children. There is another fact that perhaps, to some extent, affects both medical and surgical practice. Human life is of too little value, and patients and their attendants are careless, not only in consulting a physician, but also in following his advice. Among the lower classes, in some parts of Italy, fractures and dislocations are left to nature, and the services of the surgeon are seldom or never called in requisition to correct deformities. With us, human muscles and the organs of sense, if not in themselves wealth, are certainly the means of securing a competency, but here, their absence, if not absolute riches, at least secures admission to a profitable and not dishonorable profession. A half-blind and, apparently, idiotic cripple makes, generally, a very prosperous, thrifty beggar. Hans Anderson's "Uncle Peppo" is by no means confined to Rome, and there are vague hints, that many an orphan child has suffered sad tortures, to qualify it for the "Spanish steps."*

The sanitary condition of the Italian cities, especially in the South, is not good. Naples, with a population of 500,000, situated on one of the most beautiful bays in the world, with its wonderful treasures of art and its environs, so rich in historical associations; its mountains, its promontories, and its islands; its sky, so clear that the very sun and moon and stars seem full of joy, as they go swimming through its liquid depths; its sea of Tyrrhian blue lighting, as with flames of burning sulphur, the caverns of its milky coast. Naples, with all these attractions, would be a most delightful place in which to spend one's days, but for "the pestilence that walketh at noonday." It is a filthy city. Its most attractive street is the hotbed of fevers, the type of which is always typhus or typhoid, and frequently of the most malignant form. Many a traveller who has spent a most delightful winter in the enjoyment of the rich physical beauty of this unequalled landscape, has fallen at Rome or at Florence, a victim to the pestilential vapors inhaled upon the *Chiaja*. A good system of sewerage, that would carry the filth of the city far out into the bay, with efficient police regulations,

* Formerly the rendezvous of Roman beggars,

to keep streets clean, would make a great change in all this. At present, the sewerage is either upon the surface, or only slightly and imperfectly covered, and is discharged directly into the bay. The streets are terribly dirty, and the lower classes live in low, dark, damp rooms, reeking with filth. As a question of political economy, their lives are not worth much, and they are a source of constant anxiety to the government, but still they are human beings, and might be made to contribute largely to the wealth of the kingdom.

Rome, on its surface at least, is quite as filthy as Naples, but its sewerage is good; the *cloaca maxima*, constructed at an early period in the history of the city, is still perfect. The Tiber flows through the city with a strong impetuous current. Old aqueducts supply an abundance of pure water from the Alban hills. Almost every piazza has its fountain, which, day and night, winter and summer, sends forth its grateful streams. The population of Rome is about 200,000, occupying quite as much living space as the 500,000 of Naples.

The diseases of Rome are malarious. The zymotic forms or types are seldom seen, except as they are brought from other cities.

The campagna, as the country about Rome is called, is by no means a swamp, but is a wide plain, with but little cultivation, more like the prairies of Illinois than anything I have seen in Europe. During the spring and early summer, this prairie is covered with a rich, luxuriant vegetation, but, by July, a change begins to take place. The hot sun and south winds from, as the people here believe, the sands of Africa, convert these broad plains into a desert. With the sirocco comes the malignant forms of fever, just such as we see often in the Mississippi valley, a pernicious intermittent. In the city, they are less frequent and less severe than on the campagna, but Northern residents seldom remain after the 1st of July, or return before the 1st of October.

Florence is not only a beautiful, but also a healthy city.

> "Girt by her theatre of hills, she reaps
> Her corn, and wine, and oil, and plenty leaps
> To laughing life with her redundant horn."

The "smiling Arno sweeps" rapidly through the city. The streets are clean, though, for the most part narrow; and the dwellings are high and, at the present time, very much crowded.

The fevers of Florence are of the continued form, but without intestinal complications, and not usually severe. I saw in the hospital, several characteristic cases of mild miliary fever.

Tubercular diseases are not uncommon throughout Italy, especially at Rome, and bronchitis and pneumonia are by no means rare. I think, in America, there is, very generally, an impression that the Italian winters, if not pleasant, are at least not disagreeable. It is true, they are not cold, as indicated by the thermometer, but they are damp, and most persons from the North experience more discomfort in Rome than they would in Edinburgh or Chicago. On the shores of the Mediterranean, at the feet of the Maritime Alps, are some very pleasant situations, which are comfortable during the winter. The moisture in the northerly winds is precipitated in passing over the mountains, while the sea breezes, if not dry, are warm. Nice, Monaca, and Genoa are so situated. From all I have learned, however, I should advise with extreme caution a winter residence in Italy. From November to March, unless it be in the extreme south, this is by no means a sunny clime; excepting, perhaps, as compared with England. The most favorable periods in which to visit the peninsula, are from the middle of March to the 1st of July, and the months of October and November. Its beauty of scenery and climate, during these periods can hardly be exaggerated.

Poets and painters have depicted the Italians as preëminently beautiful. Their descriptions apply only to childhood. Beauty is seldom retained beyond the period of puberty. They grow up without intellectual or moral culture, drink sour wines, live on salads and hard bread, seldom eat meat, and have no ambition, and no aims or purposes in life, beyond the gratification of physical appetites. I speak of the lower classes, and they constitute the great bulk of the population. It is, perhaps, almost impossible that, under such circumstances, any people can have a good physical development. The body is always, to

some extent, moulded to the immortal shape created after God's own image. The *good*, the *beautiful*, and the *true* are inseparably connected.

In passing through Switzerland, I saw many cases of goitre and cretinism, for the most part, however, confined to the close valleys of the higher Alps. In other respects, the Swiss have a much better physical development than the Italians, perhaps because they have culture, freedom, self-respect, individuality. This little republic is the heart of Europe, beating strongly against its ribs of rock. In more senses than one, its pulsations are felt throughout the continent. Within its mountain fastnesses there are no beggars. Free schools, intelligence, industry everywhere. Almost every family owns its home, and every man is a sovereign. In crossing from Northern Italy, the contrast is very great. Long may the little republic flourish, the home of science, and a safe refuge for the oppressed from the surrounding despotisms.

I am under obligations to Dr. Jas. B. Gould, formerly surgeon in the U.S. Navy, but for several years in the practice of medicine in Rome, not only for many personal attentions, but also for much valuable information relating to public hygiene and medical matters in Italy. The Doctor is a man of fine professional attainments, and the most American of Americans.

Very truly, yours, H. A. JOHNSON.

EXPULSION OF A FLESHY MASS FROM THE UTERUS.

Editor Chicago Medical Examiner:—Miss C., aged about 20 years, of light complexion, an American by birth, rather below the medium size, was quite unwell, having had intermittent fever. She had not menstruated for four months, and supposed she was pregnant. Her abdomen was enlarged, and I did not doubt but that she was pregnant. I heard no more from her, until the 10th of May, 1865, about five months after the occurrence above alluded to, when I was sent for in haste. When I arrived, she was suffering the most excruciating labor pains. About the time I was ready to make an examination,

there was expelled a tumor (fleshy in texture), about four inches in length to three in thickness, without abating her sufferings. After examining the abdomen and making vaginal examination, I discovered no cause for such excruciating pain or suffering. The uterus was contracted, and smaller than after an ordinary labor, consequently I administered ¼ grain of morphia, repeating it in 30 minutes. Waiting 30 minutes, gave ½ grain more, which relieved her and caused her to fall asleep. In one hour after, I took my leave, leaving her ½ grain of morphia, to be given if her pains should return, which was given in three or four hours after, as her suffering was returning. I saw her next day, when she was quite comfortable, with the exception of some after-pains, discharging the lochia as in ordinary cases of confinement. From the time that she ceased to menstruate, until she was confined, she had very delicate health.

June 15th. I saw her to-day. She is pretty well, and has menstruated once. I report this case, not because I think it is very instructive, but because it is a case of rare occurrence, and, consequently, interesting. JNO. D. JENNINGS,

Sonora, Ohio.

ARTIFICIAL LEGS FOR SOLDIERS.

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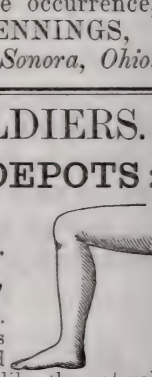

WHERE the Government furnishes the U.S. Army and Navy Leg to Soldiers Gratis, or its value applied on the Anatomical Ball and Socket-Jointed Leg, which has lateral motion at the ankle, like the natural one. **DOUGLAS BLY, M.D.,** *U.S. Commissioner.*

☞ For Instructions address Dr. BLY, at the nearest Depot. ☜
Citizens are furnished at the same Depots, on private account.

DR. MOTT ON ARTIFICIAL LEGS.

NEW YORK, FEBRUARY 10, 1860.

When the Palmer leg was invented, I recommended it to all who needed anything of the kind, because it was an improvement on the old Anglesia leg. And now I have the pleasure of informing them that Dr. Bly has invented a leg which is a great improvement on the Palmer leg. The advantages it possesses over the Palmer leg are:—

FIRST. The ankle-joint admits of motion not only antero-posteriorly, but laterally, which allows the wearer to walk on any grade, or on rough and uneven surface, without inconvenience.

SECOND. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

THIRD. The joints, instead of being bushed with buckskin, which requires a renewal at the hands of the maker, when worn, are adjustable, and under the control of the wearer.

FOURTH. The springs are made of India-rubber, and imitate more closely the action of the muscles.

FIFTH. The action of the springs can be increased or diminished at the option of the wearer, whereby each can adjust the motions of the leg to suit his own peculiar gait.

VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New Yor

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXVIII.

CASES IN PRACTICE.

By WALTER HAY, M.D., Chicago, Ill.

As the opinions of some of the latest pathological writers, upon the nature, causes, and appropriate treatment of that often occurring phenomenon, inflammation, and its neuro-pathic relations, appear to be undergoing important modifications, under the additional light thrown upon the subject, by the advances made in the study of the physiology of the nervous system, any facts, however trivial, bearing upon the subject, may be not unimportant or uninteresting.

The three subjoined cases have been selected from a number, as illustrating more clearly the principle which is believed to be involved in their history, viz., that inflammatory action is in many, if not all cases, the result of a paretic condition of the nervous system to a greater or less degree, most probably in all cases, of the vaso-motor system, consequently of diminished rather than increased vitality, and, therefore, requiring a sustaining and even stimulating rather than an antiphlogistic treatment.

The evidence furnished, also, in corroboration of the experiments quoted below, to determine the function of the sympathetic nerve, may have some value; and, while far from sufficient

to establish a principle, or even to furnish the basis for a theory, in itself, may yet suggest further observation of similar phenomena, and the collation of additional facts bearing upon the same subject, a very wide field of pathology being open to the experiment.

The value of alkaloid strychnia, in alleviating certain forms of pain, scarcely needs additional evidence, but can be explained in no way so satisfactorily as, that pain is also a manifestation of nervous paresis.

Case I. Mrs. F., aged about 45 years, of unusually robust constitution, free from any recognizable hereditary or acquired taint, was attacked, in March, 1861, with acute sclerotico-conjunctivitis in the right eye, the conjunctiva becoming rapidly ulcerated, accompanied by intense pain, effectually preventing sleep, and great photophobia, with considerable febrile reaction. The only cause to which this action could possibly be attributed, after very careful investigation, was fatigue.

The usual treatment, viz., cooling and anodyne applications, counter-irritation, by vesication of the mastoid and temporal region, and mercurial alteratives, was adopted, which was followed by *recovery* in about four weeks.

This condition was reproduced in the same patient, in November, 1863, following, as in the former case, *excessive fatigue.* The case came into my hands, on this occasion, after having been treated by a skilful oculist for nine weeks, and *recovered,* after an additional period of two weeks, under the mode of treatment used on the former occasion.

In March, 1864, the same patient was subjected to a third attack from, apparently, the same cause. On this occasion, the inflammation was more severe than formerly, the mucous membrane becoming ulcerated within thirty-six hours. The patient was entirely prevented from sleeping, during two nights, from excessive pain. On the third day from the beginning of the attack, the right eye was completely ecchymosed, presenting over the centre of the cornea a vertical ulcer, four lines by one in its dimensions.

Believing this condition to result solely from nervous exhaus-

tion, and to be analagous in character, though different, of course, in degree from the results observed 1732, by POURFOUR DU PETIT, after the division of the trunk of the sympathetic, opposite the fourth or fifth cervical vertebra in dogs, viz., "great disturbance in the circulation of the eyeball, producing inflammation, &c., &c., and, ultimately, ulceration and destruction of the entire organ."

DUPUY reports, in *Journal de Medicine, Chirurgie, &c., Decembre*, 1816, that, after extirpation of the superior cervical ganglion, the same local results, with regard to the eye, followed.

Dr. JNO. REID reports, (*Edinburgh Medical and Surgical Journal, August*, 1839,) that the conjunctiva became red and congested in a few minutes after cutting and irritating the sympathetic nerve in the neck. The observations of many other physiologists might be cited, were the above insufficient, to establish the dependence of the histogenetic process, upon the integrity of the (sympathetic) ganglionic nervous system.

Admitting, then, the results of the above observations as correct, it would appear, not an unreasonable inference, that the diseased condition of the eye, in the case which I have cited, was due to interference with the influence of the ganglionic nervous system upon the diseased organ, and that interference in this case was the result of a paretic condition of a portion of that system, most probably of the ciliary ganglion.

With this impression of the case in mind, I directed the patient, on the third day from the commencement of the attack, no other treatment having yet been adopted, to take one-sixteenth of a grain of strychnia every four hours. After having taken four doses, the patient was free from pain, and slept well for eight hours, at which time there was a marked improvement in the condition of the eye, which continued until sixteen doses had been taken, after which all treatment was abandoned. There being, with the exception of a narrow cicatrix upon the site of the ulcer, no difference in the appearance of the two eyes. The length of time elapsing from the beginning of the attack, until complete recovery, being seven days, and from the commencement of the treatment four days.

Case II. *May*, 1864. E. K., a little girl, aged eight years, of decidedly strumous diathesis, having had, during the previous autumn, a very extensive eruption of favus, was seized with rigors, followed by febrile reaction; pulse averaging about 120, small and feeble, with great lassitude, followed by sore mouth. When seen for the first time, on the eighth day, since the onset of the fever, she was in the condition above described; there was a free flow of saliva, the edges of the tongue, gingival and buccal surfaces presenting numerous ulcerations, one of which was as large as a dime, and, by reason of the swelling of the surrounding surface, a line in depth; there was some diarrhœa, with slight tenderness upon pressure over the abdomen. The only food that could be taken was milk, in small quantities. Directed one-fiftieth grain of strychnia to be given every four hours. On the fifth day, the child was so far recovered as to be able to eat the crust of bread, and the treatment was discontinued, as no longer necessary.

Case III. Ulcerative stomatitis, in a child, four years of age, a patient in St. Luke's Hospital. In this case one-fiftieth grain of strychnia was administered every six hours, and was followed by entire recovery in four days.

These three cases, occurring at wide intervals of space, and in patients essentially differing in constitutional peculiarities, social position, and surroundings, while the morbid phenomena even are manifested in totally different organs, present, however, one pathological element, and that one the most prominent, viz., ulceration of mucous membrane, in common; there was, moreover, in each case, a marked identity in its cause, exhaustion, in the first case fatigue; in the second, fatigue, together with exposure to the sun; in the third, exhaustion from imperfect nutrition and bad air, the child being a pauper. In the face of the evidence, presented by each case in its turn, enlightened by the results of the physiological experiments already quoted, the only reasonable diagnosis appeared to be paresis of the sympathetic nervous system, and this diagnosis, together with the very great value of strychnia as a nervous tonic, has, apparently, been demonstrated by the results.

It is hoped that further experiments will be made and reported, either in confirmation or refutation of the views herein offered, as the subject offers many opportunities to observers.

ARTICLE XXIX.

PUERPERAL FEVER, COMPLICATED WITH SECONDARY UTERINE HEMORRHAGE.

By SWAYNE WICKERSHAM, M.D., Chicago, Ill.

In hastily turning the pages of my note-book, I find no case that seems to me of greater interest than the one that I am about to bring to the attention of the members of the Medical Society. In its hemorrhagic feature, it may be regarded as somewhat unique. I have examined the medical literature of the subject with considerable care, and have come to the conclusion that if similar cases are of frequent occurrence, that clinical observers have but seldom recorded them. In order that an intelligent opinion may be formed, it becomes necessary that a brief history should be given of the case from the initial stage, which I will now proceed to do.

On the 7th of May, 1863, at 7 P.M., I was called to see Mrs. Evans, of this city. She was engaged in her fourth labor. I was then informed that the premonitory symptoms of the parturient effort had declared themselves about 8 A.M. From that hour, until about 4 P.M., she had but an occasional uterine pain, and a slight mucous discharge from the vagina. At the latter hour, the uterine contractions became much more frequent and expulsive in their character. When I was called, I found her cheerful and composed, and her labor apparently well developed. Her condition gave me no unusual solicitude. Her pains were moderately frequent, and of considerable force; her circulation and respiration were natural; her cutaneous surface was moist; her stomach was not irritable; there were no impacted fæces in the rectum; the bladder had just been voided of its con-

tents; and the placental membranes had been ruptured half an hour previously. A vaginal examination was made, when there was found to be an abundant secretion of mucus, the os uteri widely dilated and retracted, the pelvis was amply capacious, and there was a complete absence of all rigidity of the adjacent tissues. The presentation was cephalic, and of the left occipito-acetabular position. I did not then regard the head as impacted. I detected no undue pressure upon the soft parts, consequently, after carefully considering all that I have stated, I expected a safe and speedy delivery.

At 11 P.M., four hours after I had been called to her, no perceptible progress had been made; the condition of the mother and child were not materially altered, except a slight increased action of the heart; the pains had been tolerably frequent and quite forcible. I was unable to account for the delay, and, as nothing had been accomplished during the interval by the natural effort, I was apprehensive that nature had done her best, and that exhaustion and subsidence of the pains would eventually supervene. I therefore recommended instrumental assistance.

Dr. Orrin Smith was called in council at 11½ P.M. He carefully investigated the case, and then concurred with me, that the forceps should be applied. The pulse was, at this time, evidently on the increase, and the pains much less active. The forceps were applied about midnight.

At 12½ A.M., of the 8th, there was almost a complete subsidence of the pains; the circulation had increased to 120, and the respiration in a corresponding ratio. Notwithstanding the administration of the tincture of camphor, gentle pressure over the uturus, and judicious traction of the forceps, I think there was an interval of thirty minutes between the last two pains, and these of but little force. No ergot was at hand.

The child was removed about 1 A.M. of the 8th, and was dead. The placenta was soon after removed, during a very feeble uterine contraction. The pulse was 140, and of but little volume; skin cold, and bedewed with a clammy perspiration; and countenance expressive of anxiety. A careful exam-

ination was instituted for latent or concealed hemorrhage, but the uterus was found to be well contracted, and no more than the usual amount of blood had been lost. To me, the great and positively alarming constitutional depression was unaccountable. I could not think that her labor had been sufficiently prolonged or severe to have so nearly exhausted her, unaided by other, and, to me, mysterious, causes. Stimulants were administered.

At 2 A.M., her condition had manifestly improved. We then directed quinia sulphas, gr. ij, every two hours, and left her for the remainder of the night. I visited her at 10 A.M. She had not slept; suffered no pain, but was very restless; her pulse was 120, though possessing more strength than it did when we left her, eight hours previously; her skin was naturally warm. I ordered the quinia sulphas to be omitted, and directed morph. sulphas, gr. j, every two hours, until sleep was obtained.

9th, 11 A.M. Had slept considerably. Pulse 100; urine had been freely voided. The anodyne to be used *pro re nata.* 7 P.M. Hastily summoned. Dr. ORRIN SMITH in council. She was much agitated; pulse 120, though weak; surface moderately warm; countenance anxious; suffering much pain in the region of the uterus; abdomen very tympanitic; lochia arrested; in fact, all the symptoms of puerperal metritis. We ordered opium, gr. $1\frac{1}{2}$, every two hours; tinc. verat. vir., gtt. v, every fourth hour.

10th, 8 A.M. Dr. O. SMITH in council. Suffering but little pain; abdomen more tympanitic; great tenderness in the uterine region; pulse 100. Treatment continued. 6 P.M. Pulse 90, which was the only appreciable change. Lessened the quantity of veratrum, and ordered hops as a topical application.

11th and 12th. The symptoms have not sufficiently varied from the date of the last report to be worthy of note. The same treatment continued with slight modification.

13th, 5 P.M. Dr. N. S. DAVIS in council. She is much agitated about the tympanitic shape of the abdomen, and the absence of the lochia; pulse 115; not much pain, though quite tender over the womb. Hyd. chlo. mite, gr. ij, opium pulv.,

gr. 1½, every two hours; tinc. verat. vir. in small doses; hops externally; and additional nourishment.

14th. Her bowels have been freely moved, for the first time since her confinement. The discharges were excessively fœtid. Tympanitis almost subsided, no pain, and but little tenderness.

15th, 16th, and 17th. Apparently convalescent. Requires but little medicine.

18th. Very feeble; pulse 120; skin cold; perspiring freely. Has been in this condition much of the night and morning. Quinia sulphas was ordered.

19th, 5 P.M. Dr. Davis in council. Patient is unable to control the action of the sphincters; bowels relaxed. Nitric acid, f. ʒj, tinc. opii., f. ʒij, strychnia, gr. j, aquæ distillata, f. ʒiij, of which a teaspoonful shall be taken every fourth hour; quinia sulphas, gr. ij, every second hour.

20th, 7 A.M. Twelfth day after the birth of the child. Almost *in articulo mortis;* uterine hemorrhage commenced at 4 A.M., and continued moderately until about 6 o'clock, when it became terrific in its flow. She is now speechless; involuntary discharges; bathed in cold and clammy perspiration; features very much shrunken; and pulse, at the wrist, scarcely perceptible. She seems to have passed a vast deal of blood, though the syncope has mainly checked its further issue. The head was lowered, lower extremities elevated, a compress, saturated with ice water, was applied to the vulva and retained by appropriate appliances. The effect was the tamponization of the vagina by large coagula, which remained almost two days. Opii, plum., acetas, quinia sulphas, brandy, &c., were given. Reaction was not established until 5 P.M., and at this hour she appears almost exsanguine.

21st, 22d, and 23d. Slowly improves under tonics and stimulants. She claims that there is no discharge from the vagina of any nature.

24th, 6 P.M. 16th day after confinement. Was feeling exceedingly well until about 5 P.M. No symptom, except feebleness, of which she could justly complain. At this hour, she felt cold and asked for a blanket, and a little later, the bleeding had

returned, with all the violence that had characterized it five days previously. When I reached her residence, the immediate friends had gathered around her, and all believed that she was dying. She was unconscious, and I had little thought that she would again rally. The treatment adapted to such conditions was pursued.

25th, 10 A.M. Some little warmth of skin; feeble and frequent pulse; was unable to speak until this morning; no further hemorrhage; no pain. I ordered ferri per-sulphas, vin. ergotæ, and quinia sulphas.

26th, 1 P.M. Dr. BYFORD in council. Patient looks as if she were bloodless; pulse 125. A vaginal examination is made. Os uteri very pabulous; some offensive discharge, nothing else determined by it. A very careful examination over the uterus, demonstrates, quite clearly, its boundaries. It is, evidently, much larger than it should be on the nineteenth day after confinement. Prognosis very unfavorable, more in consequence of the prostration which is dependent mainly upon the great loss of blood, than aught else. Iron, ergot, vaginal injections, counter-irritants, with nourishment, given in a methodical manner, constitute the treatment.

29th. Has improved. Omit the vaginal injections, for fear that they might act as a provocative of the hemorrhage.

June 9th. Hemorrhage recurred this morning, and continued for a few hours. It was small in amount, and did not very materially reduce her strength. From this date, she continued to improve, and, after the expiration of several months, was fully restored to health.

The variety of uterine hemorrhage occurring in the case just described, is alluded to, by authors, under the appellation of "secondary *post partum* hemorrhage." The cases no doubt are exceptional, where the uterus has contracted subsequently to the birth of the child, and become relaxed, resulting in an indefinite amount of bleeding.

Prof. BEDFORD says, that it may occur at any time after delivery, from two hours to two or three weeks. Other authorities could be cited, who mention instances where it has taken

place as late as two or three months after the expulsion of the fœtus, but I believe the best authors are not inclined to associate the latter class of cases with delivery, but deem that their more appropriate place is under the title of passive hemorrhages. It is proper to remember, also, that there are instances recorded where, it is said, hemorrhage has taken place from a well contracted uterus. VELPEAU, in his obstetrical work, page 591, says, "I have seen, on two occasions, hemorrhage after the delivery of the placenta, although the womb was well contracted on itself; the labor had been terminated four hours in one case, and seven in the other. It is, besides, an accident, not uncommon after the first twenty-four hours." GOOCH gives credence to the statement, and INGLEBY cites cases to prove the same doctrine. ROBERTSON opposes it, and maintains that at least the fundus of the uterus must have been relaxed. Mad. BOIVIN believes, that hemorrhage and contraction of the uterus are incompatible, and insists that the blood which escapes from a contracted womb does not flow from the uterine vessels, but from the placenta, as from a compressed sponge.

As to the more prominent causes of secondary *post partum* hemorrhage, authors seem to be agreed. The retention of some portion of the placenta or membranes, is one of the most frequent causes. The recorded experience of DE LA MOTTE, LEROUX, and DELEURYE should be sufficient to warn the obstetrician of the necessity of exercising due vigilance, in the removal of detached portions of the secundines. If it is decided to introduce the hand into the uterine cavity in such a case, as advised by VELPEAU and others, it would be well to remember that BLUNDELL and INGLEBY question its propriety.

Coagula of blood in the uterus, is also mentioned as a cause. Madame LA CHAPELLE and COLLINS have both recorded examples of bleeding commencing eight and ten days after delivery, occasioned by coagula. The removal of the coagula by the hand would seem to be indicated.

Dr. MCCLINTOCK, of Dublin, and Prof. BEDFORD, of New York, also give much prominence to two other causes. The language of the latter is:—"The bleeding may be the result of an atonic

condition of the uterus, not amounting to positive inertia, but occasioning a partial flaccid state of the organ giving rise to hemorrhage." When owing to such a cause, the flow will be moderate. No heroic treatment will be demanded, but almost always, ergot may be relied upon to accomplish the arrest of the bleeding. One author advises, under such circumstances, that the ergot shall be assisted by the injection, into the rectum, of cold water twice daily. The other cause assigned by the authorities last quoted is, congestion of the organ in plethoric women, unattended by inertia, and advise the abstraction of blood from the arm, administration of saline cathartics, and an abstemious diet.

The cause of the sudden and frightful hemorrhage of the case under my care, and of which I have given the clinical history, was not, in my opinion, attributable to the retention of any portion of the placenta or membranes, or to the existence of coagulated blood. The uterus was well contracted after delivery. What effect the metritis may have had in causing subsequent relaxation, which resulted in the several attacks of such terrible secondary hemorrhage, I leave for others to judge.

ARTICLE XXX.

SYNOPSIS OF THE ETIOLOGY AND TREATMENT OF TYPHOID FEVER.

By ROSS C. RUSS, M.D., Royalton, Ind.

Authors in medical science differ very widely in reference to the origin of typhoid fever, so-called by Louis, or enteric, by Wood. Hence, different views in pathology and treatment. Wood's practice of medicine (vol. i, p. 322,) avers it to be an inherent predisposition or principle in the human system, and only needs some exciting cause to bring it into action, based upon the same hypothesis as some exciting cause will bring about the development of tuberculosis; whilst Watson believes it to be a blood-poison introduced into the system by a malari-

ous influence, destroying the normal constituents and qualities of the blood, and rendering the blood unfit to nourish the different tissues of the body. But neither of these positions will do to base a successful practice upon; all treatment suggested by such pathology must undoubtedly end in empiricism.

What, then, is the true cause of typhoid fever? I believe it to be caused by poisonous gases in the blood, generated in the circulation—in other words, they are narcotic poisons that ought and must be eliminated from the economy by the excretory organs, in order that the various organs may perform their offices according to the design of nature. But I do not believe it to be malarious at all. If retained in the circulation, the blood becomes chemically deranged and impoverished. Hence, epistaxis, ecchymosis, in a word, all the vital functions that compose the organization become very much excited and their action depraved and perverted.

From a very careful study of typhoid fever, I am satisfied that the cause of derangement commences, doubtless, with the suspension of the functions of the skin and kidneys, which are the principal eliminating organs for the impurities of the circulation. Close the porosities of the skin to the escape of carbonic acid gas, and the kidneys to that of uric acid, and the result will be general poisoning of the whole organized structure of the body—the brain and nervous system receiving the greatest injury, because possessing the greatest degree of vitality.

That the nervous system manifests a great deal of derangement in this form of fever, we do not pretend to deny; but that tt is the seat and sole cause of disturbance, I certainly cannot believe. The nervous affection is certainly secondary to the primary impression, undoubtedly the effect and not the cause. It seems to me plainly manifested that it is an effort on the part of nature to eliminate from the circulation the impurities which it contains. Hence, a derangement of the nervous system, and also of the intestinal canal, &c.

Having arrived at these conclusions, as to the pathology and causes of typhoid fever, the true indications to be fulfilled in the treatment are to equalize the circulation, allay irritation,

promote perspiration, and, in fact, aid the recuperative processes of nature. If we succeed in accomplishing this, we are able to arrest the fever at once, and restore the patient to a state of health. The various indications may be fulfilled by mild cathartics, diaphoretics, and diuretics. Standing preëminent in effecting these ends, mild cathartics will equalize the circulation, to a certain extent, and promote perspiration, and remove the unhealthy feculent accumulations of the bowels; anodyne diaphoretics allay irritation, and promote diaphoresis; diuretics aid in purifying the blood, by exciting the kidneys to a healthy action. When the skin is hot and dry, sponging with cold water will be found to afford great relief to the patient. If there is a liability to prostration and debility, tonics, stimulants, and a generous diet cannot be safely dispensed with, such as chicken or squirrel soup well salted, beef tea, &c.

ARTICLE XXXI.

BEE BREAD AS A DIURETIC.

By JAMES S. WHITMIRE, M.D., Metamora, Ill.

I am not aware that it is generally known to the profession, but it has come very forcibly to my mind, within the two months past, that beebread is a most powerful *diuretic.*

Having bought, from one of my neighbors, a quantity of honey in the comb, for family or table use, we proceeded, accordingly, to feast upon the delicious morsel, every day, for four or five weeks, during which time, on account of the muddy roads, I was compelled to take to the saddle, to perform my professional engagements; and, at the same time, I observed that I could not ride more than four or five miles without being compelled to stop and void my urine. At first, I thought but little of this inconvenience, as equestrian exercise always, to a greater or less extent, tends to promote the secretion of urine, but after a few days of that kind of exercise that effect upon

the kidneys would gradually wear away, and the annoyance cease. But this time the abundant secretion continued so persistently that I became alarmed lest my kidneys were becoming diseased, and I began seriously to investigate the nature and cause of my trouble.

I tried, first, the nitric acid test for albumen, supposing I might be affected with albuminuria, but no signs appeared. I then searched for some proof of diabetes mellitus, but without any satisfactory results, until I applied the two delicate tests of the epicure upon it, when, lo, there appeared the taste of beebread upon my tongue, and the flavor of the same upon my olfactories. All this time I was compelled to rise from my bed every night, once or twice, to urinate; and, while complaining to my wife about my troubles and fears in regard to my situation, she informed me in a very laconic manner, as I thought, that she supposed it must be a kind of family disorder, as the children had scarcely missed wetting the bed, every time they slept, for five or six weeks, a thing very uncommon with them for two or three years past.

I now selected some of the oldest comb that contained the greatest quantity of the bread, and separated it from the honey and comb; then, after abstaining a week from the use of my favorite sweet, and getting quite over my renal disease, as well as my unnecessary alarm, I partook of the bread, without the luxury of the honey, to the extent of ℥j, three times per day, when, as I was expecting, back came the enormous secretion, but this time producing an entirely different effect upon my mind, so that I was now prepared to investigate the effects a little more at length. I continued taking ℥iij per day, for about a week, during which time I voided from four to six fluid pounds per day, the difference being the *greatest when I was at some out-door exercise. When I remained quiet*, in my warm office, there was from one to one and a-half pounds less secretion than when exercising. I also repeated the same experiment on my children, and found, to my entire satisfaction, that this article possesses most valuable diuretic powers, and there seemed to be no disagreeable symptoms following its use, except-

ing a slight degree of flatulency and a looseness of the bowels produced, the latter of which is not, unfrequently, very desirable, particularly in dysuria, where there is irritation of the neck of the bladder and urethra, or, even in strangury, where there is absolute inflammation of the urinary passages. This, to me, is the more evident, from the enormous quantity of urine secreted, and, consequently, any irritating quality that it might contain would be so diluted as to be rendered entirely mild and inoffensive to the delicate structure of the urinary passages.

One advantage this article has over many others of its class is, that it is entirely palatable and inoffensive to the stomach, producing no irritation or nausea of the latter organ, and, consequently, the facility with which it may be administered to children and persons having a delicate stomach.

I write this article, not so much to enlighten the profession, or extend the already long list of diuretic agents, as to introduce a simple and, at the same time, an efficient remedy, that may be found at nearly every farm-house in the land, and to show the novel manner in which my attention was called to its effects.

ARTICLE XXXII.

REPORT ON THE SANITARY CONDITION OF CHICAGO, AND PREVALENCE OF DISEASES, FROM APRIL 1ST, TO AUGUST 1ST, 1865.

BY N. S. DAVIS, M.D., and Prof., Chicago, Ill.

Read to the Chicago Medical Society, August 4th, 1865.

The three Spring months of this year were, as a whole, more pleasant than the average for a series of years. There was less rain, the soil and roads became settled and dry earlier, and there were fewer sudden and extreme atmospheric changes. And, though the streets and alleys abounded in filth, as usual, yet there had been, during the winter and spring, less of the refuse of distilleries, slaughtering and rendering houses, &c., allowed to enter the Chicago River, and, consequently, it had

been much less offensive than during the same part of the two preceding years. The last half of May and the first week in June, were unusually dry, so much so, as to cause apprehension of injury to the growth of agricultural products. The air, however, was cool and pleasant. From the 15th to the 25th of June, the atmospheric temperature was higher than the average for that part of the month. Showers of rain fell almost every morning, and the afternoons were clear, hot, and oppressive; the atmosphere being nearly filled with aqueous vapor, and the wind blowing lightly from the south and south-west.

During this time, the ordinary diarrhœas and cholera-morbus of Summer commenced, especially among children, and on the morning of the 24th, I was called to two adults, presenting all the symptoms of epidemic cholera. One was a man, on Rush Street, in the North Division, and the other was a female, on South Clark Street, near the river. The rice-water discharges, the small, feeble pulse, the sunken eyes, the husky voice, and the muscular cramps, were all as fully exhibited as in the majority of cases of cholera, when that disease was epidemic in the Summer of 1854. During the same day I also saw three severe cases of dysentery.

On the morning of the 25th, the wind changed to the north-west, accompanied by showers and a cool bracing air. It continued cold and dry until the 28th, during which all the new attacks of bowel-complaints, whether in children or adults, that came under my observation, presented the symptoms of dysentery.

On the morning of the 28th, some rain fell, the wind changed to the south, and the afternoon was warm and oppressive. From this to the 7th of July, the winds continued from the south and south-west, with occasional showers and a high temperature. The high temperature and high degree of atmospheric moisture rendered the influence oppressive and relaxing to the animal economy. During this period, the attacks of serous diarrhœa, cholera-infantum, and dysentery again increased rapidly, and a few cases were of sufficient severity to present a strong resemblance to epidemic cholera.

On the morning of the 7th of July, the wind suddenly changed to the north, and blew cold, followed by rain in the evening. From that time to the 1st of August, the weather continued cool and rainy, with a predominence of winds from the north and north-east. During the whole time, there were not three consecutive days of clear, dry, and hot weather, such as we usually have in the middle and latter part of July. During the sixteen years that I have lived in this city, I have not known such a predominance of cold and rain in the month of July. Soon after the change to cold, on the 7th of July, the attacks of serous diarrhœa and cholera-morbus became less frequent, while those of dysentery became more numerous, and were often complicated with catarrhal symptoms, as cough and soreness in the chest. During the last half of July, not less than 12 cases of severe asthma, mostly connected with bronchial irritation, came under my care; which is much more than the usual number for that season of the year.

Most of the cases of diarrhœa and dysentery have been readily controlled by proper remedies, and, hence, the ratio of mortality has not been high. I have observed but little tendency to fevers of any type. Hence, the four months included in this report, have presented an aggregate mortality below the average for the last three years. This will be apparent from the following statistics derived from the monthly report of the Health Officer:—

	1864.	1865.
Mortality in April,	298	256
" May,	309	229
" June,	262	195
" July,	426	426
Total,	1295	1106

Excess in four months of 1864, 189

When it is remembered that the population of the city during the four months of 1865 was several thousand more than during the corresponding months of 1864, the difference in the ratio of mortality will be very striking.

It may be well to remark that the first thorough saturation

of the Chicago River with the offal and refuse of the slaughtering-houses, rendering establishments, distilleries, hog-yards, &c., occurred in the Autumn of 1863. It was then, for the first time, that the atmosphere of the whole city became offensively impregnated with the putrid effluvia from both branches of the river, and from the neighborhood of Bridgeport. And not only so, but the hydrant water supplied to the inhabitants became impregnated with the same materials.

The first unusual prevalence of disease noted in connection with the sanitary conditions just alluded to, was an extensive and severe epidemic of erysipelas, which began in the Fall of 1863, and continued until the Spring of 1864. Not long after the commencement of the erysipelas epidemic, continued fevers were found to be more prevalent and severe than usual. Many of the cases presented all the characteristics of true typhus. The prevalence and fatality of these fevers were much above the average of previous years, during all the first three quarters of 1864. Another disease which added materially to the mortality of the last quarter of 1863, and the first half of 1864, was small-pox, which was both extraordinarily prevalent and fatal. Indeed, this disease did not cease its unusual prevalence until the Spring of 1865. The ratio of mortality in Chicago, for 1864, was much above the average for a series of years, and much higher than for any previous year since the epidemic of cholera, in 1854. A detailed examination will show that this excess of mortality in 1864, as well as in the last half of 1863, was owing, principally, to the unusual prevalence of erysipelas, continued fevers, and small-pox.

The extraordinary stench which pervaded the atmosphere of the city, and impregnated the water, during the Autumn of 1863, and the succeeding Winter, induced the city authorities to bury the large heaps of putrid offal that had been deposited on the prairie in the vicinity of the south-west part of the city, and to adopt more stringent measures for preventing similar accumulations in future, either on the prairie or in the river. The consequence has been that, during the first six months of the present year, neither the atmosphere nor the water of the

city has been so offensive as during the previous eighteen months. Coincidently with this improvement in the condition the of atmosphere and water, so far as relates to the impregnation of putrid animal matter, we find a striking diminution in the ratio of mortality, as shown by the foregoing statistics. It is also apparent, on examining the details of the monthly reports, that the low ratio of mortality for the last four months, is mostly owing to the diminished prevalence of erysipelas, continued fevers, and small-pox.

Thus, in April, 1865, the number of deaths from erysipelas was 2, continued fevers 12, and small-pox 4; in May, from erysipelas 3, continued fevers 8, and small-pox 5; in June, from erysipelas 1, continued fevers 7, and small-pox 3; in July, erysipelas 1, continued fevers 15, and small-pox 0. In the corresponding months of 1864 the deaths from erysipelas and continued fevers were more than double the above figures, while from small-pox they amounted to an aggregate of 100 or more than six times the number indicated by the above figures. We have thus in the comparison of the mortality of the city during the two years past, in connection with the well-known impurities of the air and water from the presence of putrid animal matter, another striking illustration of the direct influence of such matters on the prevalence and mortality of some of the most important diseases of the zymotic class.

In speaking of the atmospheric conditions and changes, during the last four months, it was stated that during a week of warm, damp, and sultry weather between the 18th and 25th of June, attacks of diarrhœa and cholera-morbus first became frequent; and that during a week of still warmer and more oppressive weather, embracing the first seven days of July, similar attacks of bowel-affections became still more frequent and severe, some of them presenting every symptom of true cholera. The unusual cold and wet that prevailed nearly all the rest of the month of July, was attended by fewer cases of serous diarrhœa and cholera-morbus, but a larger prevalence of dysentery. The progress of these affections, and their rapid increase during the month of July, is shown in the monthly report of

mortality by the Health Officer. In his table for April, we find the following: dysentery 0, diarrhœa 2, teething 4, cramps 19; for May, dysentery 2, diarrhœa 9, teething 6, cramps 13; for June, dysentery 1, diarrhœa 13, teething 6, cramps 12; for July, dysentery 21, diarrhœa 120, teething 22, cramps 35. What the Health Officer means by the word "*cramps*" in his report, I am wholly at a loss to conceive. It will be seen that it stands responsible for no less than 79 deaths during the last four months; 35 of which occurred during the month of July. That it is not used as synonymous with convulsions, is evident from the fact that the latter term also appears in each monthly table, covering as many deaths as could be reasonably supposed to occur from convulsive diseases. That some of the cases reported under the head of *cramps* were simply cases of cholera-morbus accompanied by muscular cramps, especially during the month of July, is highly probable, but how many, it is impossible to state, and hence they cannot be properly included in the class of bowel-affections. If we exclude these and include those attributed to *teething*, the whole number of deaths from dysentery, cholera-morbus, and diarrhœa in each of the four months will be as follows:—

In April, ----------	Dysentery,	0	Diarrhœa,	6
May, ----------	do	2	do	15
June, ----------	do	1	do	19
July, ----------	do	21	do	142

Thus while the gross mortality for July is more than double that of June, three-fourths of the increase is attributable directly to bowel-affections; and that too chiefly in young children. For instance, in June, of a gross mortality amounting to 195, only 77 were children under five years of age. In July, out of a gross mortality of 426, there were under 5 years of age 271, or considerably more than one-half of the whole number. It is a common opinion, both in and out of the profession, that a large part of the summer mortality among children arises from eating unwholesome vegetables and fruit. This is certainly not sustained by the Health Officer's figures. Thus, during the past month of July, while 271 deaths occurred in children under

5 years of age, only 14 occurred in children between 5 and 10 years. Yet those of the latter age in this city certainly consume a much larger quantity and variety of vegetables and fruit than those of the former. The figures taken in another aspect equally refute the more popular and far more mischievous idea, that most of the fatal bowel-affections of young children are owing to "*teething.*" It is quite certain that the number of children undergoing the process called *teething*, in the month of July, did not differ materially from the number undergoing the same process during either of the three preceding months. And yet the infant mortality for these several months is stated as follows:—

Deaths of children under 5 years of age in					April,	102
do	do	"	"	"	May,	91
do	do	"	"	"	June,	77
do	do	"	"	"	July,	271

The refutation will be still more complete if we place in this connection the mortality directly from bowel-affections.

Whole number of deaths from Bowel-affections in					April,	6
"	"	"	"	"	"	May, 17
"	"	"	"	"	"	June, 20
"	"	"	"	"	"	July, 163

More than fifteen years of close and careful observation in this city, has satisfied me that the prevalence and fatality of dysentery, diarrhœa, and cholera-morbus among children, bears no relation either to the consumption of vegetables and fruit, or to the process of teething; but is determined almost wholly by atmospheric conditions. During the whole fifteen years, I have not known a single week of continuous high temperature, with the prevailing winds from the south or south-west, occuring between the middle of June and the last of August, that was not accompanied by a marked increase in the number and severity of the attacks of cholera-morbus and diarrhœa in young children. If to the continuous high temperature and southerly winds, is added an excess of atmospheric moisture and the usual emanations from densely populated cities, the number and fatality of the attacks will be still further increased. But I have

already extended this report to an undue length, and will call your attention to only one more topic, and that is, the very imperfect and unsatisfactory statistics of mortality furnished by the Health Officer of this city. It is probable that the gross mortality for each month is given correctly, as well as the mortality during the several periods of life; but the statement of the *causes* of *death*, is wholly unreliable, and much of it unintelligible. Thus in the table for July, we have assigned as *causes* of deaths the following: cold 1, cramps 35, childbirth 6, dropsy 8, liver-complaint 1, summer-complaint 94, spasm 1, teething 22, tumor 1, &c. Are we to infer that the individual dying from cold, *froze* to death; or did he die from bronchitis, pneumonia, tonsilitis, or something else? Where were the *cramps* that killed 35 of our citizens in one month, and what was the disease that gave rise to them? Did the 6 who died from *childbirth*, actually die from obstructions or difficulty in the delivery or from some one of the diseases incident to confinement? Were the 8 who died from *dropsy* affected with organic disease of the heart, kidneys, liver, ovaries, or what? Then the 22 victims to teething. Are we to infer that they actually became fatally exhausted from the natural growth of the teeth? If not what was the real disease from which they died? The 94 cases attributed to *summer-complaint*, were undoubtedly bowel-affections; but how many of them were dysentery, how many simple diarrhœa, and how many cholera-morbus? The worthlessness of such reports needs no comments to make it apparent.

Proceedings of Societies.

PROCEEDINGS OF THE DEWITT COUNTY MEDICAL SOCIETY.

The Society met in quarterly session, at the office of Dr. Madden, in Clinton, on Monday, the 3d day of July. The President, Dr. John H. Tyler, in the chair.

The minutes of the previous meeting were read and approved.

Drs. Adams and Madden, the essayists, being unprepared, were requested to read their essays at the next meeting.

Dr. Davis, of Wapella, exhibited to the Society a specimen of monstrosity, giving a full history of the case, for which he received the thanks of the Society.

Dr. Adams made a verbal report of three cases of cerebro-spinal meningitis, which led to a discussion upon the pathology and treatment of this remarkable and fatal disease, in which most of the members present partook.

Dr. Lewis, of Marion, reported an interesting case of diphtheria, of a child two years old, giving treatment and favorable result, which called up another animated discussion, in which most of the members participated.

Gunshot wounds was chosen as the subject for discussion at the next meeting.

On motion, it was ordered that the Secretary furnish a copy of these proceedings to the *Chicago Medical Journal* and CHICAGO MEDICAL EXAMINER, for publication.

On motion, the Society then adjourned to meet in semi-annual session, in Clinton, on the first Monday in October, at 10 o'clock A.M.

At this meeting we had the extreme pleasure of taking by the hand, our esteemed friend and fellow-member, Dr. John Wright, late Surgeon of the 107th Ill. Inf., who had just returned from the field, after serving the country creditably for three years.

CHRISTOPHER GOODBRAKE,
Secretary.

Book Notices.

THE RENEWAL OF LIFE. LECTURES, CHIEFLY CLINICAL. By THOS. KING CHAMBERS, M.D., Honorary Physician to H. R. H. the Prince of Wales; Physician to St. Mary's and the Lock Hospitals. From the third London edition. Philadelphia: LINDSAY & BLAKISTON. 1865.

This is an elegantly published octavo volume, of 638 pages; containing 52 lectures, on the following topics:—Life and

death; disease and cure; formation of mucus and pus; typh.-fever; small-pox; rheumatic fever; gonorrhœal rheumatism; pericarditis; pleurisy; hydrothorax; acute laryngitis; capillary catarrh; pneumonia; emphysema of lungs; pulmonary consumption; thoracic aneurism; disease of the heart; purpura; anæmia; prominence of eyeballs; atrophy of muscles; chorea; epilepsy; hysteria; spinal paralysis; sciatica; albuminuria; ascites; diabetes; mortification; importance of the digestive organs in therapeutics; indigestion in general; slow digestion and acidity; pain in the stomach; eructation and vomiting; diarrhœa; costiveness and constipation; dietetics; corpulence; on pepsin; on alcohol; on blood-letting; answers to objections.

The reader will find much in this book that is valuable, mixed with some doctrines which we deem, not only erroneous, but decidedly mischievous in their influence. We shall notice some of the chapters more in detail at a future time.

The Army Surgeon's Manual, for the use of Medical Officers, Cadets, Chaplins, and Hospital Stewards, containing the Regulations of the Medical Department, all General Orders from the War Department, and Circulars from the Surgeon-General's Office. From January 1, 1861, to April 1, 1865. By William Grace, of Washington, D.C. Second edition. Published by permission of the Surgeon-General. New York: Balliere Bros., 520 Broadway. 1865.

This is a small sized octavo volume, of 225 pages. It is divided into four parts. The first part contains a list of the Medical Staff of the United States Army, in February, 1865.

The second part contains the "Regulations of the Medical Department, from the Revised Regulations for the Army."

The third part contains the "General Orders relative to the Medical Department."

The fourth part contains Circulars of instruction, &c. The work having been published by permission of the Surgeon-General, and reached a second edition, we presume its statements and instructions are correct. It is designed more especially for medical officers of the Army, but will be found useful, for reference, by all classes.

Physician's Prescription Book. Containing lists of the terms, phrases, contractions, and abreviations used in prescriptions, with explanatory notes;

the grammatical construction of prescriptions; rules for the pronunciation of pharmaceutical terms; a prosodical vocabulary of the names of drugs, etc.; and a series of abbreviated prescriptions, illustrating the use of the preceding terms. To which is added a Key, containing the prescriptions in an unabbreviated form, with a literal translation. For the use of Medical and Pharmaceutical Students. By JONATHAN PEREIRA, M.D., F.R.S. Fourteenth edition. Philadelphia: LINDSAY & BLAKISTON. 1865.

This is a small duodecimo volume, of near 300 pages, the contents of which are fully indicated by the title quoted above. It is a very convenient and useful work for reference; and the fact that it has reached the fourteenth edition, is sufficient evidence that its merits are appreciated by the Profession.

Editorial.

MEDICAL SCHOOLS IN CHICAGO.—Before the next issue of the *Examiner* will have reached its readers, the time for commencing the regular Annual Courses of Lectures in the medical colleges of this City, will have arrived. By the Annual Announcement of the Chicago Medical College, we learn that the next lecture term will commence on the *first Monday* in October, and continue, as usual, until the first Tuesday in March following. All the chairs in the Faculty are well filled; the means of illustration, both in the laboratory and museum, are ample; and the general course of instruction much more extensive and complete, than in most of the medical colleges in this country. It is also one of the first medical schools in this county, that has made daily *Hospital Clinical* instruction a necessary part of its course. Its intimate connection with the Mercy Hospital, gives it all the facilities in this respect that can be desired, or made available for the benefit of the student. Professor H. A. Johnson, President of the Faculty, who is spending the present season in Europe, will return before the opening of the lecture term, and bring with him some valuable additional means of illustration, particularly in the departments of anatomy, physiology, pathology, and microscopy. All further

information needed, can be obtained by perusing the Announcement, or by addressing the Secretary of the Faculty, Professor E. Andrews, 101 Washington Street, Chicago, Ill.

Not having received a copy of the Annual Announcement of the Rush Medical College for 1865 and 1866, we can give no particular information concerning the coming term in that institution. We presume, however, it will be much the same as in former years.

DEATHS.

Professor D. L. McGugin, of Keokuk, Iowa.—The death of this most faithful and enlightened member of our profession, was duly announced to us in the resolutions below, copied from the local papers of that city. Dr. McGugin had been, several years, one of the most influential members of the Faculty of the Medical Department of the Iowa University; and an active and highly esteemed member of the American Medical Association. He was universally respected as a physician, a citizen, and a Christian:—

Death of Dr. D. L. McGugin.—Pursuant to a call, the Keokuk Medical Society, together with the members of the medical fraternity of Keokuk, met at the office of the Secretary.

Present—Drs. Knowles, Seaton, Taylor, Cleaver, Harvey, McDonald, McIntosh, Sanford, Davis, Curtis, and Carpenter.

The meeting was called to order, and Dr. Knowles selected to preside, who briefly stated the object of the meeting to be the adoption of measures appropriate to the funeral services of D. L. McGugin, M.D.

On motion, it was

Resolved, That the medical fraternity of the city be requested to attend the funeral in a body, and that the members wear the usual badge of mourning.

On motion, a committee of three, viz.:—Drs. Taylor, Harvey, and Cleaver were appointed to draft resolutions expressive of the sense of this meeting.

It was further

Resolved, That the proceedings of this meeting be published in the daily papers, and that the family of the deceased be furnished with a copy.

Society adjourned to meet at Dr. Cleaver's office Sunday, at

2 o'clock P,M., and proceed in a body to the residence of the deceased. F. KNOWLES, M.D., *Chairman.*
A. M. CARPENTER, M.D., *Secretary.*

Whereas, In the wisdom of Divine Providence, our professional brother, Professor D. L. McGugin, has been taken from our midst to the "home of his fathers," therefore, as a last tribute to his departed worth, as a citizen and member of our profession and expressive of the sense of the members thereof in this city, it is hereby

Resolved, That, in his loss, which we deeply feel, we have been deprived of our associations with one who ever sought the highest standard of scientific attainment, and who has felt that the chief aim of his life, next to his religion, was to advance the interest of the profession he so signally adorned for a period of more than a third of a century.

Resolved, That as a patriot, he having twice entered the service of the Government, when struggling with foreign and domestic foes, he was true and loyal in the highest degree, and set a glorious example, by his personal sacrifices, his earnestness, and zeal, that the present and future members of our fraternity may well emulate.

Resolved, That, as a friend and member of this Society, we have ever found our deceased brother faithful, just, and kind-hearted; liberal in his treatment and opinions of others; and never actuated by narrow, jealous, or unkind sentiments.

Resolved, That we tender our heartfelt sympathies to the family and relatives of the deceased, and more particularly to her who has shared with him the struggles, anxieties, aspirations, and honors of an eventful life, do we offer our sincere condolence.

DR. JAMES COUPER, OF NEW CASTLE, DELAWARE.—"Died, suddenly, at New Castle, Delaware, on the 12th instant, James Couper, M.D." Such was the brief announcement in a Philadelphia paper, that gave us the first intelligence of the departure of one of the best men in the ranks of our profession. When the first circulars were issued, in 1845, inviting a convention of delegates from the medical societies and colleges in the United States, preparatory to the formation of the American Medical Association, Dr. Couper was one of the first to respond cordially to the proposition.

He attended the Convention in New York, in May, 1846, and was made chairman of the committee on the preliminary education of students of medicine. At the succeeding meeting in Philadelphia, he made an able and interesting report, which was fully approved by the meeting. Up to the time of his death, he remained an active and highly respected member of the National Association. He was an excellent example of the good physician, the upright citizen, and the true Christian. We deeply sympathize with his large circle of mourning relatives and friends.

Dr. Melvin N. Rust, Surgeon of U. S. Vols.—We copy the following notice of this most amiable and talented young physician, from the City papers:—

Intelligence has been received of the death of Major Melvin N. Rust, a graduate in the Chicago Medical College at its last term. He died at Nashville, Tenn., August 13th, of bilious dysentery, after an illness of some four or five days, and was only twenty-four years of age. Since his graduation, Dr. Rust has held the position of surgeon of the 154th Illinois Volunteer Infantry, and, at the time of his death, was chief surgeon of the brigade to which his regiment belonged, and surgeon in charge of the post hospital at Nashville. He had, for so young a man, a large and warm circle of friends; and possessed a kind heart, the most gentlemenly qualities, and far more than ordinary ability and industry, and gave every evidence that he would assume a high rank in his profession. A special meeting of the Faculty of the Chicago Medical College was held this afternoon, at which the death of Major Rust was announced, regarding which the following preamble and resolutions were unanimously adopted:—

Whereas, It has pleased Almighty God to remove from our midst Dr. Melvin N. Rust, our friend and former pupil, a member of the graduating class of 1864-5; therefore be it

Resolved, That in the death of Dr. Rust we feel the loss of a personal friend, and of one who gave unusual promise of future success in his profession, and of usefulness in the community, and who, by his gentlemanly qualities and marked ability as a student, secured alike our admiration and personal friendship.

Resolved, That with the numerous friends, and especially with his relatives and immediate family, we deeply sympathize in the loss they and we have sustained.

Resolved, That a copy of these resolutions be sent to the family of Dr. Rust, and that their publication be requested in the CHICAGO MEDICAL EXAMINER, and each of the daily papers of the City.

AMERICAN DENTAL ASSOCIATION.—The regular Annual Meeting of this organization was held in this City recently. The number in attendance was large; the proceedings harmonious, interesting, and profitable; and the social intercourse exceedingly pleasant. Below we give a part of the admirable welcoming address of Dr. Allport, chairman of the committee of arrangements. And as the subject of Specialties and Specialists is attracting some attention, at the present time, we have also given the substance of the remarks made in response to a sentiment offered at one of the evening entertainments:—

Mr. President, and Gentlemen of the American Dental Association:—In bidding you welcome to the City of Chicago, on an occasion so interesting and auspicious to our Profession as the present, it may not be deemed inappropriate to the time and place of our meeting, to indulge in a brief retrospect of the past.

In the summer of 1859, twenty members of the dental profession met in convention at Niagara Falls, to consult together as to the expediency of forming a National Association upon the representative basis. All, I believe, who were present felt that if such an association could be formed, and should receive the sanction and coöperation of any considerable portion of the better class of practitioners, the best interests of the profession would be promoted, and great good result to the public.

The number of state or local societies, then existing, to send delegates to the annual meetings of an association of this kind, was so very limited, that but few even of the small number present felt at all sanguine of the ultimate success of such an enterprise. But in view of the many great and good results anticipated from such association, in case it should be crowned with success, and in the hope that the formation of local societies would be stimulated thereby, it was determined to take the

initiatory steps for the organization, deferring final action until the following year.

At the appointed time, July 31st, 1860, *twenty-three* delegates only, of the various dental societies and colleges then existing, met in the City of Washington, and the American Dental Association was organized, and entered upon its work. Five years only have passed, and from what was a small and doubtful beginning, by the steady and well-directed efforts of those who were instrumental in its formation, this association has become one of the most successful enterprises of the profession, and one of the most useful and influential dental societies in the world.

Of the professional standing of those who have attended, as delegates, the annual meetings of this Association, and have been accustomed to take part in its proceedings, it is not necessary for me to speak. They are universally acknowledged as standing among the most scientific and successful operators of our time and country, and as belonging to the class *progressive.* The essays and discussions of the members of this Society have passed into the literature of our profession, and become a part of its history. In point of ability they have been by far the ablest and most instructive that have ever emanated from any body of dentists in our country, and will suffer little, if any, in comparison with the essays and discussions of the American Medical Association. Should this Association adjourn *sine die* to-day, and never hold another meeting, yet sufficient good has already been accomplished by it to fully vindicate the wisdom and foresight of those who first projected it, and have done the most to sustain it.

As we cast our mind's eye over the history of dentistry, and see how, in the last forty years, it has risen from a tinkering, catch-penny calling to the dignity of a noble profession, in whose ranks may be found men of high moral and scientific culture, commanding alike the confidence and respect of the educated and refined, we can but attribute much of this progress and pleasing result to the influence of our various local and national associations. All of these associations have had their

influence for good, and are important, but none is so well calculated, in every respect, to allay that spirit of jealousy and distrust in each other—that fatal millstone around the neck of all selfish communities—none so well calculated to strengthen the bond of a common interest and brotherhood, that should bind the profession of the East with the West, the North with that of the South, and make all to feel their mutual dependence upon each other as a representative National Association. In it are embodied the principles that underlie the structure of our National Government, which has demonstrated to the world that, for the protection of a community of interests, or for the development of resources, whether material or *mental*, no organization or government is so strong as that based upon the principles of a representative Republic.

You are all familiar with the advantages of association and combined labor in the various avocations of life, no matter whether it be in mental or physical labors. You assemble here to-day, as delegates and members from different parts of our extended land, and in the discussions here elicited you will find new illustrations of the old familiar truths that "knowledge is power," "union is strength," and "in a multitude of counsellors there is wisdom." By the contact of mind with mind, both will be strengthened, and embryo ideas and theories will be developed into full maturity. "There is a magnetism in such contact, full of creative energy. Flint and steel are passive in themselves, but clash them together and they give out fire, and brightness dazzles upon the sight. The positive and negative poles of a battery never come together without a *result*. By friction of different mental organizations together, an idea is evolved, a new law is discovered, a new creation is added to the wealth of knowledge, and the long-coming rays of a new truth, like those of a far-off star in the laboratory of heaven, reach and illumine the world."

Gentlemen, this Society was organized for a purpose. Its mission is not yet fulfilled. It has a great work to do—a destiny to accomplish. The men who were instrumental in its formation were not discouraged because it was so small and

unpromising at first. They knew that in the profession it had a strong and vigorous mother to nurse it, and that its growth was certain, but they did not expect it to mature so rapidly. Nor will those who are now engaged in it be so elated by its unexpected success as to allow it to sink under that supine and careless indifference, which so often follows prosperity. Its course will be onward and upward—its motto, Union and Progress.

Remarks of Dr. N. S. Davis, President of the American Medical Association, at an entertainment given by him, at his residence, to the Members of the Americal Dental Association, in response to a toast offered by Dr. C. W. Spaulding, President of the Association, July 27, 1865:—

"To the President of the American Medical Association; Medicine, Surgery, and Dentistry—departments of a common science, their disciples should constitute a common brotherhood."

Dr. N. S. Davis, being generally called for, responded substantially as follows:—

Gentlemen and Ladies:—I am not only happy to be honored with your company this evening, but cheerfully respond to the sentiment just expressed by your honored President. That medicine, surgery, and dentistry are actually practical departments of a common science, very few will be disposed to deny. I say *common science*, in deference to popular custom. It would be more proper, however, to use the plural form of expression; for what is generally styled *medical science* is really an aggregation of many sciences, and their cultivation with direct reference to the prevention and alleviation of human suffering. The science of medicine, popularly so called, consists of facts and principles selected from every department of natural science, philosophy, psychology, political and social economy, and their application to the elucidation of the causes, nature, and treatment of such diseases, deformities, and injuries as are liable to afflict our race. Hence the student of medicine, in its general sense, is emphatically a student of

nature. And not only so, but he studies the broad fields of nature for the highest and noblest of temporal objects, namely, to qualify himself for mitigating or relieving the imperfections, deformities, and diseases of his fellow men; whether they occur in the teeth, the organs of special sense, the extremities, or the more vital organs within the body.

Medicine, surgery, and dentistry are all based upon anatomy, physiology, pathology, and materia medica. Without anatomy none of you, as dentists, can know either the structure of a single tooth or its connections with the jaw, gums, bloodvessels, nerves, &c. Without physiology, none of you could know the natural uses and influences of the several parts just named, or the relations of the teeth to the whole processes of digestion, assimilation, and nutrition. As pathology bears the same relation to organized structures in an imperfect or diseased condition, as physiology does to them in the natural, so without a knowledge of it, neither the physician, surgeon, or dentist could know anything of the origin, nature, and tendencies of the diseases and defects he professes to treat. The materia medica, in its full scope, includes everything that can be made useful in the mitigation or removal of any of the ills to which man is liable. The gold that fills a cavity in a tooth, the wash that soothes an irritated gum, and the instruments used for adjusting both, are as much a part of the armamenta or materia medica, as are the pills and powders administered by the physician. These four branches of medical study are fundamental, and no man can do full justice, practically, to the most limited specialty without a thorough knowledge of them all.

Every member of your Association will acknowledge that a dentist should certainly understand the composition, structure, and mode of development of the teeth, together with the causes that render their development defective, or induce in them disease and decay. But in a single tooth you have three out of the five primary forms of living, structural organization, namely, the fibrous, vascular, and nervous, with the peculiar arrangement of inorganic matter to give it solidity.

A knowledge of these structures, whether chemically, ana-

tomically, or microscopically, involves a knowledge of the same structures in all other parts of the body. To understand the development of a tooth and its appendages, from materials selected from the blood, involves a knowledge of the blood itself, and all the laws that govern the intricate processes of assimilation, nutrition, and disintegration in living structures generally. The same remark applies with equal emphasis to the causes of imperfections and diseases of the dental organs, and the means for remedying them. Indeed, there is not a living atom of our physical organization so isolated that a knowledge of its structure, nutrition, disintegration, and various morbid conditions, can be obtained, without developing all the essential facts and principles of anatomy, physiology, and pathology.

So far, therefore, as dentistry is a science, as distinguished from a mere mechanical art, it rests on the same foundation, and necessarily involves the same series of studies as all other departments of medicine and surgery.

Of late, much has been said about specialties and specialists; and there is, at this day, especially in our country, a manifest tendency to favor the multiplication of both. We are told that instead of a few leading divisions of medicine and surgery, we should have almost as many specialties as there are important organs in the human body; and that every individual member of the profession should devote himself to the study and treatment of some one class of diseases, or the diseases of some one organ or apparatus of organs. By thus concentrating attention upon a limited number of diseases or injuries, it is claimed that greater skill will be acquired in their treatment; and more advancement in our knowledge of their nature and tendencies. Division of labor and concentration of attention, is said to have been the parent of most of the discoveries and improvements of modern times. It is further claimed that the whole field of medical and surgical sciences, with their practical application, is so extensive that it is impossible for one man to so master the whole, as to properly qualify himself for the practice of all its dedartments.

This process of reasoning is plausible, and to a limited extent true. It is true that in all the mere mechanical arts, the greater the division of labor, and the more perfectly each man is restricted to a certain series of movements, the greater will be the skill and accuracy acquired in their performance.

The Dentist who restricts his work entirely to the processes of filling teeth, may possibly acquire greater skill in that particular work, (provided he has enough of it to do,) than he would if he filled teeth, extracted teeth, fitted artificial teeth, &c.

The Surgeon who restricts himself entirely to the more important and delicate operations on the eye, or the ear, or the bloodvessels, may acquire greater dexterity in those particular operations, than if he attended to the whole field of operative surgery. But the rule applies properly, only to such operative procedures as are essentially mechanical; and cannot be extended to the treatment of diseases of particular organs, without causing more mischief than good. The reasons are obvious to every enlightened and reflecting mind.

First, the various organs of the human body are not so many isolated parts, the functions and diseases of which have no influence upon each other, but they are so intimately connected and mutually dependent, that not a single morbid impression can be made on one organ that will not exert a modifying influence on all the rest.

The same heart sends the blood to every organ and structure in the body. The same nervous centres radiate the delicate threads that are to impart sensibility or command motion to the remotest parts of our organization. And the same vital properties pervade every living atom. Every link in the chain of actions constituting digestion, assimilation, nutrition, disintegration, and excretion is so connected that not one can be broken or marred without embarrassing the action of the whole. Hence, it is literally impossible to comprehend the nature, tendencies, and results of the diseases of one organ without studying their influence on all the others and *vice versa*. Hence there can be no such thing as specialism proper, in the study of path-

ology or the nature of diseases. The whole field must be studied before any one of its parts can be fully understood.

Second, the circumstances of civilized communities ever have, and probably ever will, prevent any extensive division of practical medicine and surgery into specialties, except in a few large cities and densely populated towns. Much the larger part of the inhabitants of every country occupy the rural districts, where they are obliged to send from one to ten or fifteen miles for a practitioner of any kind. Now, suppose each member of the profession was devoting himself to such special diseases as he imagined to be most in consonance with his taste, and a farmer living five miles from his market place or business centre, should be attacked with acute pain in his side, and send for Dr. A. on the supposition that his attack was inflammation of the lungs. After ten or twelve hours delay, Dr. A. arrives, but finds on examination that the pain is certainly located below the diaphragm, and of course no disease of the lungs. Inasmuch as the diseases of the lungs and throat constitute his SPECIALTY, the case does not belong to him and he retires. From six to ten hours more are spent in getting Dr. B., whose specialty embraces the diseases of the abdominal viscera or digestive organs. But, on examination of the case, Dr. B. finds the acute pain in the side of his patient to be neuralgic and dependent on the disease of the spinal cord or its membranes, at the origin of the nerves affected. This places the case out of the range of Dr. B.'s practice, and makes it necessary to send ten miles to a neighboring town for Dr. C., whose specialty embraces diseases of the cerebro-spinal nervous system.

Again, suppose the farmer, instead of having been attacked with a pain in his side, had fallen from a load of hay and broken his leg, and wounded an artery in his hand.

A messenger is sent in great haste to the nearest town for Surgeon A., who comes, perhaps, with a new and improved fracture box, and dresses the broken leg with much skill and dexterity. This done, he asks for his fee, and takes his hat to depart. Hold, Doctor, exclaims the patient; you have dressed my leg, but are you going to leave me to bleed to death from

this wound in my hand? Oh, my dear sir; blandly replies the Surgeon, that is not in my department. I attend only to fractures or injuries of the bones. For injuries and diseases of the bloodvessels, you must send for Surgeon B., in the adjoining town. Without multiplying illustrations, is it not obvious that specialties can be made practically beneficial only in populous towns; and even in them only to a limited degree? It may be said that the cases cited as illustrations are of the nature of *emergencies*, which every professional man must be prepared to treat, at least temporarily. But how is he to be prepared to treat such cases, even for the briefest practicable period, without having so studied the whole field of professional science and practice, as to be familiar with all its parts? If he has so studied it, what becomes of the argument or pretense that the field is so extensive that one man cannot keep himself master of the whole? The truth is, that the greater part of medical and surgical practice consists of emergencies. It is not one time in ten, that the physician or surgeon, when he starts to visit a patient for the first time, knows what kind of disease or injury he will find on his arrival. And he can neither satisfy an enlightened conscience nor do justice to a confiding community, unless he is always prepared to meet such emergencies, and treat whatever ills may be presented to him in a skillful and proper manner.

If a man, living in the country, is attacked with iritis or acute conjunctivo-cornitis, and suffers a permanent disorganization of the textures of the eye and loss of vision before he can possibly reach a reliable occulist, it is a very unsatisfactory apology for his family physician to allege that diseases of the eye constitute a *specialty* to which he has given little or no attention. Yet many such cases are constantly occurring throughout the country.

But, gentlemen, there is still another aspect of this subject worthy of a moment's thought. From the very nature of the laws that govern mental operations, exclusive practical attention to any one department of a general subject, tends to contract and bias the mind, by giving undue relative importance

to one series of facts, while neglecting another series of equal real value. An evil of much greater magnitude, however, consists in the strong tendency of specialism to encourage incompleteness of professional education. During a connection with medical teaching for sixteen years, I have rarely found a student who on his final examination, proved himself ignorant of some important department, without alleging that he did not intend to practice that particular department, and consequently had paid less attention to it. Indeed, incompleteness of education leading to the adoption of partial and restricted views, and the universal tendency to neglect whatever is not intended to be turned directly to practical pecuniary advantage, constitutes the foundation of much of the evils that exist in the profession of our country.

You are, doubtless, ready to ask by this time, if I then oppose all specialties in medicine. By no means. There is a certain natural basis on which a limited number of specialties can be founded with great advantage; and which, indeed, develope themselves by the natural and inevitable course of circumstances. For instance, the diseases, deformities, and defects of the dental organs, involving no immediate danger to life, and requiring for the treatment of many of them, special mechanical manipulations, naturally, and almost necessarily, constitute a special department of surgery. A department, indeed, that should be regarded as equal in importance and dignity, and consequently requiring equal education with every other branch of the profession. Those conditions of the eye requiring delicate and dexterous operations are also most of them chronic, and allow the patient time to seek and obtain the services of men who have acquired more than ordinary skill in the performance of such operations. The same is true of those conditions requiring some of the most dangerous and difficult surgical operations upon other parts of the body; such as lithotomy, ovariotomy, tying large and deep-seated arteries for aneurism, &c. Hence it is eminently proper that in all large cities where the required opportunities are afforded, men should devote special attention to such departments. But this never can justify any class of

medical men for contenting themselves with only a partial professional education.

Mr. President, with the last clause of the sentiment you have offered, I most cordially agree. That all educated and honorable physicians, surgeons, and dentists should constitute a "*common brotherhood*," is dictated alike by a community of interest, a similarity of education, and a common object, namely, the alleviation of human suffering and the prolongation of human life.

I am glad to see the prosperity of your Association and its truly national character. Like the American Medical Association, it constitutes a strong social, as well as professional link to bind all parts of our country indissolubly together. And permit me to add, that if the members of the legal and ecclesiastical professions, from the East, West, North, and South, would annually commingle with the same cordiality and liberal feeling, it would so perfectly bind the hearts of this great nation that *secession* would never again drench our loved land in human blood.

ON THE DIAGNOSIS AND TREATMENT OF SCABIES.

Perhaps there is no disease, which has passed through so many phases, and caused so much dispute amongst savans, as the complaint now so well understood as scabies or the itch. It seems singular that a disease, apparently well understood by the Greeks and Romans, should, so late as the beginning of the present century, have been misunderstood, both as to its cause and progress. Yet the acarus, so well known now, for the first twenty years of the present century, was denied an existence by most practitioners.

But, on the other hand, a false impression is given the student by WILSON, when he leads us to suppose that, after a day's work, one may easily take from a patient 18 or 20 acari, and examine them at his leisure under the microscope. My experience has been, that in very few cases, not more than one in twenty, can the acarus be found, and then only by the greatest care and perseverance.

It must be remembered that JOHN HUNTER, an acute observer, never found an acarus, and many good dermatologists have had the same experience. During my studies, connected with the Boston Dispensary, under Dr. WHITE and Dr. DAMON, in more than 100 cases, I have only seen the acarus four times. For a general description of the acarus and his habitat, I refer to MCCALL ANDERSON, and will here only speak of the positions in which the acarus is most likely to be found.

The burrow of the acarus, first red, then dark and tortuous, and from four to five lines in length, is, of course, the diagnostic mark of scabies. As to the eruption, I do not think it can often be distinguished from others of a vesicular character. The first place which has been recommended as the site of burrows, is between the fingers. But a much more probable one, is the point where the ends of the fingers touch the palm when the hand is closed, as the acarus is carried to this point under the nail, after scratching. In males, the penis seems to be a favored locality, for reasons which it is not necessary to specify. In the hospitals of Vienna, this site is never overlooked. In infants and young children, the hips offer most promise, as it is here the hands of the nurse oftenest fall. In fact, the burrow is more likely to be found anywhere, in a perfect condition, than between the fingers, except in the earliest stages. The burrow having been found, if one wishes to explore for the "little stranger," let him open one of the most promising, at the end where a vesicle is just making its appearance, and if he finds *her*, he is extremely fortunate.

I have no doubt there are some cases of scabies, where the burrow cannot be found. But it must be remembered that the hands of artisans, who work in acrid substances, are liable to ecthymatous eruptions, so children who are badly or insufficiently fed. But it is better that the burrow should be found, before making a diagnosis of scabies, for a preparation which would be suitable for scabies (such as strong black soap, recommended abroad by physicians, and in this country by Dr. HARDY, of St. Louis,) would be inapplicable to cases of ecthyma or impetigo.

Having discovered the burrow of the acarus, the treatment is very simple. It is understood by all, that sulphur ointment is almost a specific. I generally unite

℞. Potassæ Carbonat., ---------- ℥j.
Sulphur, ---------- ℥ij.
Adipis, ---------- ℥j.

As to the use of the black soap, the *savon vert* of Paris, the oil soap of this country, I am not in favor of it, except in cases of extreme filth, where, in process of time, we hope to see the cuticle. If the eruption of scabies is complicated with any other, showing a bad state of the blood, I think a mild soap, slightly caustic, is preferable and quite sufficient. The patient should remain in a warm bath an hour before applying the unguent. In all cases, I believe tr. ferri chlorid. should be prescribed as a tonic. In private practice, where a neater prescription is sometimes desirable, I would recommend as an unguent,

℞. Potass. Iodid, ---------- gr. x.
Adipis, ---------- ℥j.

to be repeated two or three times. I believe it would be equally effectual with sulphur ointment. I am, Sir,

Very truly, yours,
E. A. P. BREWSTER, A.M., M.D.,
Janesville, Wis.

Transactions of Illinois State Medical Society.—The Annual Volumes of Transactions of our State Medical Society have been published, and copies mailed to all the members who have paid their annual assessment for the present year.

It is proper to mention, that only a small part of the members have paid; and consequently the treasury is, not only empty, but in debt to the extent of nearly two hundred dollars. If each member of the Society, who is in arrears for the assessment of the present year ($3), would promptly remit the amount to Dr. J. H. Hollister, of Chicago, Treasurer, it would at once settle the printer's bill, and secure to himself a copy of the Transactions, which is well worth the money. It contains 152

pages, and the report of Dr. Prince on Orthopedic Surgery, is alone of sufficient interest and value to make it desirable for every member of the profession.

American Medical Association.—Members desiring copies of the *Transactions* for 1865, must forward their subscriptions ($3) immediately, as the edition will be limited to the number of paid subscriptions.

WM. B. ATKINSON, *Permanent Sec'y.*

CITY MORTALITY FOR JUNE AND JULY, 1865.

DISEASES.

Apoplexy,	1	Fever, Scarlet,	3
Accidents,	4	" Typhoid,	4
Bronchitis,	1	" Typhus,	2
Burned,	1	" Brain,	2
Congestion of Brain,	6	" Puerperal,	1
" " Lungs,	2	Heart Diseases,	3
Cholera Morbus,	1	Inflammation of Brain,	7
Cholera Infantum,	1	" " Bowels,	2
Consumption,	18	" " Lungs,	3
Croup,	15	Killed,	2
Cramps,	12	Liver Complaint,	2
Convulsions,	10	Measles,	1
Childbirth,	5	Old Age,	4
Cerebro-Spinal Meningitis,	3	Paralysis,	1
Drowned,	11	Rheumatism,	1
Diphtheria,	4	Suicide,	2
Dropsy,	9	Small-Pox,	3
Diarrhœa,	2	Stillborn,	9
Dysentery,	1	Summer Complaint,	9
Erysipelas,	1	Teething,	6
Epilepsy,	1	Unknown,	4
Epileptic Convulsions,	1	Water on Brain,	7
Found Dead,	2		
Fever, Lung,	2	Total,	195
" Nervous,	1		

Ages of the Deceased.—Under 5 years, 77; over 5 and under 10 years, 23; over 10 and under 20, 10; over 20, and under 30, 16; over 30 and under 40, 24; over 40 and under 50, 12; over 50 and under 60, 6; over 60 and under 70, 5; over 70 and under 80, 3; over 80 and under 90, 3; stillborn, 9; unknown, 7. Total, 195.

NATIVITIES,

Chicago,	106	Scotland,	3	Other States,	19
Canada,	5	Sweden,	1	Unknown,	2
Colored,	2	Germany,	17		
England,	10	Norway,	5	Total,	195
Ireland,	24	Illinois,	1		

DIVISIONS OF THE CITY.

North, 41 | South, 70 | West, 84 | Total, 195

Total number of deaths in June, 1864, 262

DISEASES.

Asthma,	3	Intemperance,	5
Apoplexy,	5	Intermittent Fever,	1
Accident,	6	Inflammation of Brain,	2
Burned,	3	Inflammation of Bowels,	10
Bright's disease,	2	Inflammation of Lungs,	4
Brain fever,	4	Liver Complaint,	1
Bilious Fever,	2	Measles,	5
Congestion of Brain,	9	Marasmus,	2
Congestion of Lungs,	4	Nervous Fever,	1
Cholera morbus,	10	Old Age,	8
Cholera infantum,	7	Paralysis,	1
Cold,	1	Puerpural Fever,	1
Calculus,	1	Suicide,	1
Cancer of Stomach,	2	Stillborn,	6
Cancer of Head,	1	Summer Complaint,	94
Consumption,	24	Sun Stroke,	2
Cramps,	35	Spasms,	1
Croup,	3	Sore Throat,	1
Convulsions,	16	Scarlet Fever,	25
Childbirth,	6	Scalded,	1
Cerebro-Spinal Meningitis,	1	Typhoid Fever,	13
Drowned,	1	Typhus Fever,	1
Diphtheria,	7	Teething,	22
Dropsy,	8	Tumor,	1
Dysentery,	20	Whooping Cough,	2
Diarrhœa,	9	Unknown,	18
Erysipelas,	1		
Found dead,	3	Total,	426
Flux,	1		
Heart Disease,	4	Same month last year,	426

Ages of the Deceased. — Under 5 years, 271; over 5 and under 10 years, 14; over 10 and under 20, 15; over 20 and under 30, 26; over 30 and under 40, 32; over 40 and under 50, 16; over 50 and under 60, 10; over 60 and under 70, 17; over 70 and under 80, 7; over 80 and under 90, 3; stillborn, 8; unknown, 15. Total, 426.

NATIVITIES.

Chicago,	273	Holland,	1	Sweden,	3
Other States,	55	Ireland,	28	Wales,	2
Bohemia,	1	Norway,	10	Unknown,	3
Canada,	1	Poland,	1		
England,	7	Prussia,	1	Total,	426
Germany,	24	Scotland,	4		

DIVISIONS OF THE CITY.

North, 126 | South, 130 | West, 170 | Total, 426

We call attention to the following notice, and invite an early answer.—[Ed. Examiner.]

MEDICAL PRACTICE WANTED.

An ex-surgeon of the United States Volunteers, who was in the practice of medicine in the South-west before the commencement of the Rebellion, desires to purchase the whole or one-

half of a good medical practice, or to hear of a good location. Please address *Surgeon*, in care of Doctor N. S. Davis, No. 23 Washington Street, Chicago, Ill.

TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

PHILADELPHIA, Feb. 6, 1865.

Dear Sir,—As there are various methods by which the volume may be sent, inform me which you prefer. If by mail, please forward *thirty-two cents* in post-office stamps, that your postage may be prepaid.

Very respectfully,

CASPAR WISTER,

Treasurer American Med. Association.

No. 1303 Arch Street.

The following volumes are for sale:—

Proceedings of the Meeting of Organization, 50 cents.

(Vols. I., II., III., IV., and VI., are out of print.)

Vols. V., VII., VIII., and IX., *if taken collectively*, $5 for the set. If singly, $2 apiece.

Vols. X., XI., XII., XIII., and XIV. at $2 each.

Vol. XV. at $3.

Vol. XVI. in press.

ANTISEPTIC INJECTION FOR THE CADAVER.—Dr. S. W. Wetmore, in the *Buffalo Medical and Surgical Journal*, recommends as the best agent for this purpose, the arsenite of soda. Boil 12 ounces crystallized carb. of soda and 8 ounces arsenious acid in 32 fluid ounces of water for one hour. Then add water to make three quarts of the solution, which will be ample for two subjects. He injects into the femoral artery. Bodies thus injected remain free from vermin. The preparation "not only acts as a disinfectant, but an antiseptic, destroying all virus, rendering the tissues firm, the muscles retaining their color and solidity, prohibiting decomposition and offensive odors." Dr. W. is so well satisfied with the efficacy of the solution as to affirm that "it renders all former preparations obsolete." There is no risk in pricking the hand either from animal virus or from the arsenic. Arsenic alone will not answer the purpose.—After the injection the body should be left undisturbed for 12 hours or longer. The bloodvessels will then be found empty, and should be injected with melted tallow colored with Venetian red, or some other substance, for the purpose of distending them and facilitating dissection. Death from hemorrhage is

most favorable for the preservation of the body. Sudden death generally favors decomposition. In sunstroke, the body often has a putrid odor before life is extinct. These facts have a practical bearing in connection with the embalming of soldiers dying in the service.

Anæsthesia by Electricity.—"The sedative effects of the constant current," says M. Remak, (who is now experimenting at La Charité,) "when the current is very feeble, are exceedingly interesting. To produce such effects, in fact, the current must never excite painful sensations. The sedative action produced by this current differs from that of other sedatives; and it may be employed when, for various reasons, the use of opium, belladonna, etc., is objectionable. One of the most striking instances in which the current is of service is in removing the increased sensibility of an inflamed part. If, in such a case, a positive electrode, of sufficiently extended surface, be applied over the seat of inflammation, and the negative electrode at a distant part of the body, we shall find, in the course of five or ten minutes, that the sensibility of the part has greatly diminished. Thus, for example, in a case of very painful inflammation of the elbow or wrist, we place the positive pole over the brachial plexus, and the other over the scapula; and we find the pain is soon lessened. Lately, in the presence of MM. Claude Bernard, Velpeau, and Beau, I applied the current in the case of a man who ten days before had struck his knee, and suffered great pain at the inner border of the patella. The pain was so great that the patient could not walk except with his knee bent. I placed the positive electrode over the crural nerve below Poupart's ligament and the other pole over the extensors of the leg. In a few minutes we observed that the joint became less painful, and the extension of the limb more easily performed. The patient was completely cured by three applications of the remedy. Let me remark to all those who would repeat my experiment, that the curative effect depends upon the surface of the elements of the pile; that is to say, that piles composed of small elements must be absolutely rejected."—*British Medical Journal* and *Dublin Medical Press.*

Premium Offered.—Dr. T. C. Brinsmade, of Troy, N. Y., offers a premium of $100 for the best essay on medical and vital statistics, with a plan for hospital reports and records of private practice, and a draft of a registration law. The essay is to be handed to the Committee of the New York State Medical Society on Prize Essays by the 15th of December next.

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SESSION 1865-6.

FACULTY.

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R. N. BARR, M.D., Professor of Anatomy.
GUSTAV C. E. WEBER, M.D., Professor of Civil and Military Surgery.
M. S. CASTLE, Esq., Professor of Legal Medicine.
W. J. SCOTT, M.D., Professor of Materia Medica, Botany, and Pharmacy.
A. METZ, M.D., Professor of Ophthalmology.
J. C. SCHENCK, M.D., Demonstrator of Anatomy.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

VOL. VI. OCTOBER, 1865. NO. 10.

Original Contributions.

ARTICLE XXXIII.

TREATMENT OF STRICTURE OF THE URETHRA BY FORCIBLE RUPTURE.

Before proceeding to speak of the treatment of stricture of the urethra, permit me to call your attention to a few points of the surgical anatomy of this canal, which it is very important for every surgeon to understand, before he should attempt to introduce instruments into it. When the penis is lifted up—but not distended—a catheter has only to pass, at most, $7\frac{1}{2}$ inches, when it will enter the bladder.

The urethra is divided into three portions—the prostatic, membranous, and spongy. The extent of the prostatic portion being from 6 to 10 lines in length; of the membranous, 6 to 8 lines; while that of the spongy portion is subject to the greatest variation, and is the only part of the urethra in which the different positions,—and extension—make a change in the direction of the canal.

When a straight catheter is introduced into the bladder of a dead subject laid out on a table, the instrument describes, in relation to the surface of the table, and the axis of the body, an angle of 45°. When the penis is raised, the angle in the spongy portion is effaced; but the curve in the membranous and prostatic portions remains the same.

The direction of the canal in the quiescent state has been compared to the letter S, which is true, when the bladder and rectum are distended.

When the penis is laid against the abdomen, only one curve is found. The urethra is very far from being straight, but it may be rendered so.

The parietes of the canal are soft and yielding, and capable of being extended, in the male, one inch without doing injury to the parts; while, in the female, the urethra may be so distended that calculus of the size of an almond may be extracted from the bladder through this canal. This passage is very frequently the seat of stricture, in fact, more frequently than all the remaining outlets of the body combined.

In the introduction of an instrument into the bladder, the rule of the veteran surgeon, Dr. Mott, is an excellent one, viz., "Make haste slowly."

Every surgeon must be aware of the difficulties attending the treatment of this form of disease.

Without stopping to speak of the usual modes of treatment recommended by most teachers, and in systematic works of surgery, I propose to offer for your consideration an entirely new method (as far as I know) of treating this formidable disease. It is one that has been adopted and used in the United States Marine Hospital, of this City, for the last four years, also, during my term of service, at the Mercy Hospital—and once in private practice—with abundant success. I refer to the treatment by forcible rupture. The instruments used are these which I hold in my hand.

I claim for this method of treatment the following advantages over the old methods:—

1st. It is more expeditious.

2d. In the hands of judicious operators, more safe.

3d. Is not so apt to be followed by relapses.

Every surgeon is aware of the length of time necessary to treat a stricture, by dilatation, for instance. I have known instances where weeks and even months elapsed before a cure was effected.

The danger attending this form of treatment is considerable, also. The liability to make false passages is great; in fact, that method of treatment can only be conducted by skilful hands.

In the treatment by rupture, a very few days, at the longest, suffice to effect a cure.

2. In the hands of judicious operators it is more safe.

Under this head I will simply state, that out of the large number of cases treated by this method, I have never known any bad symptoms follow. It is in use at the Marine Hospital almost every week, where I have had opportunity to observe its merits.

3. Not so liable to be followed by relapses.

The liability which exists for the return of a stricture after treatment by dilatation, or by caustic, is excessive, and is noticed by all authors. Erichsen says: "There is great tendency to relapse, and for the constriction to return, the stricture rapidly becoming tighter as soon as the introduction of intruments is discontinued."

I have not observed this to follow after treatment by rupture. The cases in which this method of treatment is applicable, are all forms of organic stricture, when the smallest-sized sound can be passed. It is necessary to place the patient under the influence of chloroform during the operation. I might cite cases illustrating this method of treatment, but as I have not any prepared, I will content myself by reporting one that occurred under my care at the Mercy Hospital.

Thomas Ott, American, aged 24, was admitted into the Mercy Hospital, March 1st, 1859, with stricture and spermatorrhœa, which affections he had had for four years. The cause of the stricture, which was situated in the membranous portion of the urethra, was, in all probability, the repeated applications of caustic, for the cure of the spermatorrhœa. He was treated during the month of March by gradual dilatation, but without much apparent benefit. On the first of April, that being the commencement of my term of service, he came under my care. It was with difficulty that a No. 2 sound could be introduced at

this time. I continued the introduction of sounds until I could introduce a No. 3, when I introduced the small-sized rupture instrument, and opened it to its full extent; a slight hemorrhage followed the operation, but nothing more. On the 1st of May, I operated with the larger-sized instrument, which was followed by no bad symptoms whatever.

The patient continued in the Hospital until the 15th of the following June, under treatment for his spermatorrhœa, during which time a large-sized sound was passed. There was no obstruction whatever. I have heard from the patient once since. He remains entirely well. Professor Davis observed the treatment of this patient, and its results.

ARTICLE XXXIV.

SURGICAL CASES.

By E. ANDREWS, M.D., Prof. of Surgery in Chicago Medical College.

Case I.—*Varicose Ulcer treated by Hypodermic Injection.* The cases of varicose veins treated by injection, which I published in the Examiner two months since, have had the effect to elicit considerable inquiry on the subject, as shown by numerous letters which I have received. The following additional one may be of first interest.

Michael Kenny was admitted to Mercy Hospital, six months ago, with a varicose ulcer on the left leg, about an inch and a quarter in diameter. The patient was a hearty, well-fed Irishman, inclining to corpulence. The ulcer was indolent, with thickened edges and indurated base, the floor of it feeling hard, and having little sensitiveness. The veins around it were varicose, some of them extending beneath the ulcer, and being marked by compressible streaks in the hard floor. This man was treated by every ordinary method which promised success, in vain. He had sulphur and muriate of ammonia internally, and nit. silver, sul. copper, scarifications, adhesive straps, olive oil and turpentine, chloride of zinc, muriate of ammonia, and,

finally, caustic potash, externally. Nothing had any more than a slight effect, and, at the end of six months, he was scarcely changed in his condition. The patient had resisted all advice to submit to hypodermic injection, but at length concluded to try it. I injected about three drops of tinct. ferr. mur. into each of about five varicose places, two of which were in the veins under the floor of the ulcer. Inflammation, to some extent, followed. The patient was treated by giving tinct. iron freely internally, and carefully supplied with a constant current of fresh air, to prevent aplastic phlebitis, and with an astringent lotion externally. A small abscess formed at one of the points of injection, which was lanced, and the whole affected tract was red and inflamed. The ulcer underwent no remarkable change until the abscess discharged, and the inflammation began to abate. The edges of the ulcer then commenced rapidly to cicatrize, and at the present time is nearly healed.

CASE II.—*Hydrocele.* This disease is commonly treated either by the seton, or by injections of tinct. iodine. In both these methods we are usually successful at the first operation. This and the following case, however, are introduced to show that both operations occasionally require repetition before they are completely successful.

A. B., a young man, had a hydrocele of two years' standing. It had been palliated occasionally by tapping—of course, without permanent advantage. A timid physician determined to inject the iodine, but fearing inflammation, he only used a very weak solution. The result was partly favorable, obliterating the upper part of the sac, but not the lower. He then sent the patient to me. I tapped the remainder of the sack, and threw in the tinct. of iodine in full strength. After keeping it there a few moments, it was allowed to run out of the pipe, as usual, and the tube withdrawn. This resulted in a moderate inflammation, and an obliteration of still more of the sack. When the inflammation subsided, there still remained a small hydrocele at the lower part of the tunica vaginalis. This I obliterated by a third injection, which completed the cure.

CASE III.—*Hydrocele requiring repetition of the seton.* A

H., a German, fifty-two years of age, and of good constitution, had a hydrocele for several years. The walls of the sac were so thick that no light from a candle could be passed through them; hence the ordinary translucency could not be detected, but an exploring trochar proved the nature of the contents. I determined to treat it by seton. A tape was therefore passed through it from below upwards, along which the fluid drained away. In four days a smart inflammation was set up, which caused the tumor to be swollen to its original size. The seton was then removed, and the inflammation gradually subsided, when the lower part of the sac was found not to be obliterated, and to be filling again with fluid. I inserted another seton, which I left in about a week, which completed the cure.

On the whole, I find that there is very little ground of choice between these operations, both being usually successful, but each of them, in a few cases, requiring repetition.

Case IV.—*Anchylosis of the knee.* A large number of anchylosed knees are grossly neglected by the profession. Many practitioners seem to be unaware of the fact, that nearly all the stiff knees which hobble around with the limb fixed at a right angle, and with the foot unable to reach the ground, can be straightened without risk, and often without even cutting the tendons.

C. Y., an Indian boy, in Mackinaw, was sent to me by a gentleman who took pity on him as a cripple. He had cut his knee with an hatchet, resulting in suppuration of the joint, which subsequently healed with anchylosis, and the knee fixed at a right angle on the thigh. The flexor muscles were also contracted. I cut both hamstrings, and applied a jointed splint, which was gradually extended by a screw brace. In six weeks the limb was completely straightened, and he was sent home with instructions to wear a straight splint until there was no tendency to a return of the flexure. The patient not remaining long enough, I could do nothing towards restoring motion, but still the limb will be strong, and enable him to go without crutches.

Case V.—C. F., a girl twelve years old, had caries of the

right knee, with absorption of the head of the tibia, and fistulous openings into the joints. After nearly recovering from the inflammation, and after the fistulas were nearly healed, she was brought to me with the knee anchylosed, bent at a right angle, and the tibia slightly displaced backwards and outwards. An extension splint was applied without cutting the tendons, and the limb was straightened in about eight weeks.

CASE VI.—S. H., a boy aged thirteen years. He had caries of the knee, with destruction of part of the head of the tibia, some years ago, which gradually healed, leaving the knee deformed exactly like Case V., but worse. Fistulas all healed, and the knee bent at about a right angle. Applied an extension splint, which brought the foot to the ground in about ten weeks. He now walks about with a staff, keeping the limb in a straight position by means of a straight splint.

CASE VII.—A woman aged thirty. Has had an inflammation of the right knee without caries. It is bent nearly to a right angle, but preserves a slight mobility. I applied the extension splint, which has brought down the foot more rapidly than usual. As it now appears, it seems that two weeks application of the splint will completely straighten the limb. Exercise will probably restore a degree of mobility in this case.

In many of these cases it is not possible to restore the control of the extension muscles over the limb, on account of the patella being firmly glued to its position, so that it will not glide on the joint, and we have no effectual and safe way of dislodging it; still, if the foot is brought to the ground, and the knee remains stiff in a nearly straight position, it immediately becomes of use in walking. The patient is able to dispense with crutches, and move about again in something like a natural manner.

AN EASTERN ANTIDOTE AGAINST FEVER.—There is a great mortality from a description of fever, just now, in Gwalior. The Maharajah has ordered the perpetual performance of various religious ceremonies, with a view of checking the course of the epidemic.

ARTICLE XXXV.

CONTINUED FEVER.—THE TYPE OF DISEASE NOW PREVALENT.—CASES.—INJURIOUS EFFECTS OF EVACUANTS IN THE EARLY STAGE, &c.; Being the Abstract of a Clinic in the Medical Wards of the Mercy Hospital.

By N. S. DAVIS, M.D., Prof. Clinical Medicine, &c., Chicago, Ill.

Gentlemen:—The case before you is a female, aged about 20 years, a native of Ireland, and a resident of this country only a few weeks. Some ten days since, she came to my office, complaining of some pain in her head, with some pain also in the back and limbs; a sense of oppression or tightness across the chest; looseness of the bowels; loss of appetite, and lightness or dizziness in the head. She presented an anxious expression of countenance; dryness of the lips; a thick, dirty white coat on the middle and posterior part of the tongue; some tremulousness of both tongue and lips; skin dry, harsh and congested; pulse soft, weak, and about 110. She had been complaining about one week, during which time she had taken two doses of "salts and senna," each operating freely as physic, and, during the two days that had intervened since the second dose, had continued to have four or five copious, thin, intestinal discharges each day. I advised the patient to go home, keep quiet, take bland nourishment, and sufficient anodynes to control the intestinal evacuations, and informed her that she had an attack of continued fever. About one week after she was brought to the hospital. She is, consequently, now near the end of the second week of her fever.

The symptoms I wish you to notice carefully, at present, are the following:—The whole cutaneous surface is dry, harsh, and warmer than natural; the face slightly redder than natural; eyes suffused, and expression dull; position dorsal; respiration short, accelerated, and accompanied by strongly marked dry bronchial râles all over the chest, and occasional rough cough;

dulness on percussion over the lower and posterior part of the chest, but very little expectoration; pulse 115 per minute, small and weak; abdomen tumid, inelastic, but only moderately tympanitic; three or four thin, brown, intestinal evacuations each day; tongue and lips dry, dark red, and tremulous; slight subsultus; and hearing dull.

Such are the more important symptoms presented by the patient; and what are the pathological conditions indicated by them? For symptoms are valuable to a rational practitioner, only as they indicate, more or less clearly, ths nature, location, stage of progress, and tendencies of such pathological or morbid conditions as actually exist. In the patient before us, the somnolency, the dulness of hearing, the sub-sultus, and the frequent mental wandering point directly to a strongly depressed condition of the nervous functions. The dryness of the skin, the lips, the mouth, the mucous surface of the bronchial tubes, and the scantiness of urine, equally indicate a depressed or retarded condition of all the secretory functions. The moderately congested and livid hue of the skin, the congested condition of the lower and posterior portions of the lungs, as indicated by dulness on percussion, and the soft, weak pulse indicate general feebleness of capillary circulation.

Thus, the three great functions of innervation, circulation, and secretion are much impaired, producing all the phenomena of a low type of fever, while in this patient the enfeebled capillary circulation in the lungs has led to a serious degree of infiltration of the pulmonary tissue, and in the mucous membrane of the lower half of the intestinal tube to a scarcely less dangerous degree of effusion constituting the liquid stools and a tendency to softening or ulceration. Such are the proximate pathological conditions presented by the patient.

But a further inquiry arises, of great interest, but less easily answered, namely:—What causes the well-marked depression of all the functions just named? Is it the action of some morbific agent or fever poison, primarily on the nervous centres depressing nerve force, and through this influencing the vascular and secretory functions? This was essentially the doctrine of Cul-

len, and of a majority of writers on practical medicine, from his day to the present time. A more modern, and somewhat popular doctrine at the present time, alleges that the supposed fever poison acts primarily upon the constituents of the blood by a zymotic or septic influence, and that all the important functional disturbances are consequent on the deteriorated condition of that fluid. A few, like Virchow and Addison, who make all the phenomena of life depend on cell action, would make the phenomena of fever depend on the primary modifying influence of the fever poison on the functions of the cells, both in the blood and the tissues. Careful study and extensive clinical observation will show you that all these theories are defective and unsatisfactory.

My own opinion has often been expressed, both here and in the lecture room. It is, that the initial steps of morbid action, constituting fever, are neither in the nervous, secretory, or vascular structures or functions separately, but in the elementary properties common to all the tissues. But it was no part of my purpose, at this clinic hour, to dilate upon the essential pathology of fevers. The symptoms of the patient lying before us are of the most serious import. The universal depression of vital properties, with the extensively engorged condition of the lungs, rendering respiration imperfect, while the frequent intestinal evacuations still continue, renders the prognosis extremely unfavorable. The deteriorated condition of the blood always existing in typhus, is here increased by the diminished interchange of carbonic acid gas for oxygen through the lungs, and there is danger of a suspension of life before any change can be effected by which a more healthful impression of the blood upon the capillary and secretory structures can be made.

Still, the rational indications for treatment are plain. They are to repress the intestinal evacuations, to arrest the further engorgement of the pulmonary tissues, and to sustain the functions of the nervous and vascular systems. To accomplish the first, there is probably no remedy more efficacious than oil of turpentine combined with a certain proportion of tincture of opium. It not only exerts a peculiar action on the mucous surfaces of

the intestines, by which the tone or contractility of the capillaries is increased and the accumulation of blood consequently diminished, but it also increases the activity of the whole capillary vascular system. Hence, it not only fulfils the local indication, but aids materially in accomplishing the third object named. To devise remedies that will relieve the extreme congestion in the lungs and promote the reäbsorption of the dark blood infiltrated into the posterior and lower parts of these organs is no easy task. The immediate cause of the infiltration or engorgement is a failure in the susceptibility of the capillaries and their consequent dilatation. When this state of bronchial and pulmonary congestion commences early in the progress of the fever, I have found no remedy for its relief so reliable as small doses of tartrate of antimony and potassa, given in combination with opium sufficient to prevent any danger of acting on the bowels. Given in the early stage, it lessens the general febrile action, promotes perspiration, and renders respiration and expectoration much more free. But when the patient, as in this case, has already advanced to that state when the pulse is small and weak, the skin relaxed, the abdomen tympanitic and bowels very loose, with much dulness on percussion over the middle and lower part of the lungs, and somnolency, you can expect no benefit from so direct a sedative as antimony. The principal reliance must then be placed on such remedies as tend to sustain the sensibility and action of the nervous and vascular systems, and prevent the further deterioration of the blood. We will give this patient ten drops each of oil of turpentine and tincture of opium, in the form of an emulsion, every four hours, and the sixteenth of a grain of strychnine with four drops of nitric acid dissolved in sweetened water, between. We will also dissolve two drachms each of chlorate of potassa and gum Arabic in a tumblerful of cold water, and let the patient take a tablespoonful every three hours. The patient must also be fed regularly, every two hours, with two or three tablespoonfuls of a porridge made of sweet milk and wheat flour or oatmeal. Seeing the sub-sultus, the weak pulse, the oppressed breathing, the dingy or leaden

hue of the skin, and the mental dulness exhibited by the patient, you ask why I do not order brandy or other alcoholic stimulant? I answer, that nearly thirty years of careful observation at the bedside of the sick has satisfied me that under such circumstances strychnine is a far more reliable remedy for sustaining the nervous functions than alcohol, while the effects of the latter, in diminishing the decarbonization of the blood, makes it positively detrimental to the already seriously embarrassed condition of the lungs.

Before leaving the subject suggested by this patient, I must add a few words in relation to the character of the cases of continued fever prevalent in this city the present season, and a caution in regard to the use of harsh evacuants in the early stage. Since the epidemic of erysipelas, in the fall and winter of 1863, a large amount of our attacks of continued fever have presented, prominently, the symptoms of typhus rather than those of enteric typhoid fever. That is, the first stage has been accompanied by more intense headache; more restlessness; more frequent pulse and respiration; often a semblance of constipation; a thick whitish coat on the tongue, with less tendency to change to red and dry; and the much more frequent appearance of a mulberry or flea-bite rash early in the second stage. The apparent torpor of the bowels, coupled with the coated tongue and intense headache, in the early stage, has often led the patient, and sometimes under the direction of his physician, to use active cathartics and, in a few instances, emetics. I have known of no instance in which such a course has not been productive of very bad consequences. It often induces an early and excessive prostration, coupled with a fixed congestion of the intestinal mucous membrane, greatly favoring softening of the membrane and intestinal *hemorrhage* in the more advanced stage of the fever. Several cases have come under my observation illustrating this tendency.

A few weeks since, I was called to see a young man, in consultation with his attending physician, who had been attacked severely with typhus fever. The bowels not being loose in the early stage, the physician gave him several compound cathartic

pills, which did not seem to operate harshly, but soon after a pitcher of lemonade was prepared with half an ounce of chlorate of potassa in it, intending to have the patient use it sparingly as a drink. The nurse, however, allowed the patient free access to the pitcher, and he drank its contents all in one night. This was immediately followed by such copious intestinal evacuations, some of them tinged with blood, that the patient was almost hopelessly prostrated in a few hours and died during the succeeding week.

Another case was that of a man, aged about 25 years, who had recently come to this city. He first called to consult me at my office. I noticed, at once, an unusually haggard expression of countenance; tremulousness of the lips and tongue; a very soft and frequent pulse; with unsteadiness of gait in walking. I learned that he had been laboring under all the symptoms of the first stage of continued fever, for ten days, during which time he had taken repeated doses of active physic, to remove what he called "biliousness." I explained to him the nature of his sickness, prescribed some anodyne and astringent medicine to check the excessive intestinal discharges, and urged him to keep quiet in bed. He persisted, however, in keeping up three or four days longer, at the end of which time I found him in bed, with the same tremulous lips and tongue; the same haggard countenance; a still weaker pulse; and a peculiar tawny hue of the skin, as though the hematine of the red corpuscles had become diffused in the serum of the blood and stained all the tissues. His mind was dull, hearing impaired, urine scanty and turbid, and bowels still moderately loose. In a few days, petechial spots appeared over the chest and abdomen, and, in about ten days from the time he took his bed, he passed at once a chamber-vessel half full of dark, offensive, and partially coagulated blood. The discharge was repeated three or four times within thirty-six hours, producing collapse and death.

The last case I shall mention, was a young man, aged about 23 years, sanguine temperament, and usually in good health. While on a business tour in the country, during the latter part

of August and first part of September, he was taken with the usual symptoms of the forming stage of continued fever, viz.: severe pain in the head, back, and limbs; loss of appetite; furred tongue; dryness of the skin and mouth, &c. On arriving at one of the towns on the Mississippi river, he felt so unwell that he was induced to take a warm foot-bath, accompanied by an *emetic*, and followed by an active cathartic. The remedies produced excessive vomiting and purging, but in no degree diminished the headache or fever. With some assistance on the way, he reached his home in this city on the third day after he took the evacuants. His face was flushed; eyes watery and dull; skin dry and moderately hot; tongue covered with a white fur and red at the edges; lips and mouth dry; pulse 110 per minute, small and weak. He complained of a general sense of heaviness and oppression; constant thirst; and severe dull pain, with a sense of dizziness through the whole head, but more severe in the cerebellum and base of the brain. Since he took the emetic and cathartic, three days previously, he had retained nothing on his stomach, more than a very few minutes. A single spoonful of cold water would be promptly ejected by vomiting. I endeavored to overcome the irritability of the stomach by giving a solution of bicarbonate of soda, one drachm, and sulphate of morphia, one grain, in two ounces of water, in doses of a teaspoonful every hour. Sinapisms were also applied to the epigastrium, and cold applications to the head. On the second day, finding the irritability of the stomach only partially allayed, while all the other symptoms were unchanged, I gave, in addition to the soda and morphia, a powder of calomel, 2 gr., every four hours, until it should induce a movement of the bowels. I did this because the continued intense suffering in the head, with fulness of the temporal and carotid arteries, and heat above the rest of the body, caused a fear that a low grade of meningeal inflammation might complicate the case. After four powders had been taken the bowels moved, and the irritability of the stomach was so far relieved that liquids were retained, if taken in small quantities, but the pain and sense of confusion in the head continued unabated, and there was much

mental wandering. The pulse was frequent, small, and weak; respiration hurried; some sub-sultus. I ordered a solution of permanganate of potassa, one grain to the ounce of water, to be taken in doses of a tablespoonful every three hours, and a tablespoonful of thin milk porridge every hour. On the following day, finding less heat in the head, but more sub-sultus and mental wandering, I gave one grain of valerianate of quinine in sugar-coated pill, between each of the doses of permanganate, and doubled the quantity of milk porridge for nourishment. He continued this treatment three days, during which the general symptoms underwent but little change, except that the pulse became a little less frequent, the fever less active, and a characteristic typhus eruption appeared quite copiously over the trunk of the body. The hearing also became dull, and a large bullæ or vesicle, filled with purple or bloody serum, appeared on the outside of the right thigh, and another on the scrotum, while the bowels became slightly relaxed. Owing to these symptoms, an emulsion of oil of turpentine and tincture of opium was given in the place of the solution of permanganate of potassa, and the doses of valerianate of quinine were increased to two grains. Under these remedies, with as much simple nourishment as his stomach would bear, he continued to progress favorably, though changing but slowly, for three days longer, when there occurred one pretty copious discharge of dark blood from the bowels. I immediately gave him a powder containing tannate of quinine, 2 grs., pulv. geranium root, 5 grs., and pulv. opium, 1 gr., and repeated it every two hours, with a teaspoonful of the turpentine and laudanum emulsion between. After three doses had been given, and no movement of the bowels occurring, the interval between the doses of medicine was lengthened to two hours. When twenty-four hours had elapsed without further evacuations, the powders were discontinued, and the valerianate of quinine again given in their place.

From this time, the patient began slowly to convalesce, and has since fully recovered. These cases strongly illustrate the evil effects of active purging in the early stage of continued

fever. Such practice not merely prostrates the patient, but it directly increases that irritability of the mucous membrane with its aggregate glands of Peyer, which so generally constitutes an important pathological condition in all varieties of continued fever. I think I have never known a case of typhoid or typhus fever, in which active emetics or purgatives were used in the early stage, that did not run a protracted and dangerous course.

ARTICLE XXXVI.

EDITOR MEDICAL EXAMINER:—

DEAR SIR,—I notice, in the June No. of the EXAMINER, a short article over the signature of X, upon the patenting of surgical instruments, and comparing it to patenting the "Paths of Virtue," by a clergyman.

Now, unfortunately for the comparison, this is just what the clergyman does. Look every week into the *N. Y. Independent*, and see the heading of the sermon of Henry Ward Beecher, "Entered according to Act of Congress," &c. Take up any book written by an American upon religion or morals, and the warning appears against the use of its wisdom without paying for it. The copyright is to literary labor what the patent right is to mechanical labor; and it becomes a question whether it is not time for the medical profession to outgrow its old prejudice against patent rights. This prejudice has lingered from the dark ages; in which to steal the honest earnings of the *worker* was honorable. Now the public maxim is:—"To every man a just reward for his labor."

X admits that the feeling or usage against patents is not one growing out of any necessary relations, but claims that it is one of common consent, among medical men. Then let us, by common consent, have the labor of men who make books without paying them for it. The book maker may console himself with the reflection that he reads a vast amount, which he has never paid for, and besides that he is working for science and humanity. It is one of the strange things that medical men

will willingly pay an author through the copyright for his labor, but will not willingly pay an inventor for his labor, though in many cases more valuable to the profession. This unreasonable prejudice is fostered by the general compounding of secret remedies—nostrums which remunerate through a gigantic system of advertising and falsehood with patents. Nobody that understands the business patents a medicine or compound, but he keeps the composition a secret, and protects himself from imitation by the name, which is regarded as a *trade mark*, by the label which may be *copyrighted*, and by the proprietary stamp which is furnished by the Government. The patenting of the compound opens its composition to any one who will pay for transcribing the patent. Z.

Selections.

ON A NEW REMEDY FOR DYSENTERY.

By WILLIAM KERR, Surgeon, &c., &c.

Twelve years ago, an accidental circumstance led me to attempt an improvement in the treatment of dysentery. Commencing with camphor and henbane, added to opium, I experimented on every officinal narcotic, coming to the conclusion, that of these the most efficient combination was one of opium, henbane, hemlock, stramonium, and digitalis. I had cause to be better satisfied with this than with any previous combination; but from time to time failures or tardy success induced the conclusion that something was still wanting—that something, if to be found at all, was therefore to be discovered in plants not yet admitted into the Pharmacopœias. After a long search, cicuta maculata, sium lineare, and conio-selinum canadense, indigenous to the swamps and woods of Canada, supplied the deficiency better than any others I happened to try. Sium lineare supplanted hemlock (conium maculatum), on account of the combination containing the latter occasionally producing pain in the bowels and failing, while that with sium lineare gave relief; and dulcamara supplanted henbane, as experience showed it to be better adapted to act beneficially along with the other members of the

combination. Its constituents, when the investigation was concluded, were as follows:—four officinal, viz., opium, stramonium, dulcamara, digitalis; three non-officinal, sium lineare, cicuta maculata, conio-selinum canadense. All are more or less narcotic; and digitalis, dulcamara, and sium lineare are also diuretic. So many are necessary evidently, from each possessing some peculiarity in the way in which it affects the system: the combined effect of these peculiarities being required to combat the disease.

Without opium the combination is slightly aperient, improves appetite, promotes sleep, and, according to experience gained in dysentery and other diseases, heals ulceration of the mucous membrane. In dysentery, opium is necessary apparently to check the frequent motions of the bowels, the strictly curative power depending chiefly, if not altogether, on the other ingredients. In infants generally, and also in a few adults, digitalis does not act favorably. In such instances I have substituted squills with great benefit. Adults generally require the combination with digitalis; of a very few infants the same may be said; and to many adults the combination with digitalis, or that of squills, may be given indifferently. Excepting opium, the part employed is leaf. Digitalis and squills are combined in the proportion of half a part of each—all the others in that of one part. For infants, opium is reduced to a half part. The usual dose to adults is six and a half grains, digitalis or squills being each half a grain, and all the others one grain each.

Between five and six years were spent in determining the components. Beginning with three, I never afterwards, either in adding or subtracting, changed more than one plant, till I had as fully as lay in my power ascertained the result of each change. In this manner I have experimented on thirty-two plants or their products. I have pulled down the combination and built it up again, and thus done my best to ascertain the necessity for each component. For upwards of seven years the combination has been used with very great success; but as my own experience may be suspected of being biassed, I shall confine myself to the reports of others.

Dr. Brown, of Berlin, C. W., had a very severe attack, of which he published an account in the *Montreal Medical Chronicle* for December, 1858.

Of this paper the following is a copy, slightly abridged:—"In August last, I was seized with epidemic dysentery. The usual remedies were promptly administered—opium, the quantity of which speedily rose to twenty-one and even twenty-four grains

daily, together with mercury, acetate of lead, and ipecacuanha, but no amendment took place. I vomited incessantly, and, though tormented with thirst, could retain no fluid. In my case the effect of large doses of opium was prostrating and overpowering. I did not sleep, but could scarcely be said to be awake, except to the consciousness of severe pain, agonizing tenesmus, and frequent vomiting. I had been ten days ill, nature was sinking, collapse was to be feared, when Dr. Kerr visited me. He immediately gave three and a half grains, or half a grain of each of the seven ingredients." (The recipe is here given by Dr. B.)

"I was very restless from a sensation of sinking and severe pain. In half an hour, after dozing a few minutes, I became aware of a great change. I could lie quiet; the distressing tenesmus was less, pain in the body and limbs less severe, the sensation of sinking relieved, a glow of warmth was supplanting the cold of threatened collapse, and an inclination to sleep, not before experienced during my illness, was stealing over me. The first thought was amazement at the change, then a faint recollection of a new medicine crossed my mind, and I resigned myself to its influence. I was immediately asleep, and for an hour and a-half had a comfortable and refreshing sleep, unaccompanied, comparatively speaking, with sensorial disturbance. When I awoke all the symptoms were relieved. Seven grains were given every six hours; but the quantity of digitalis being too great, this drug was reduced from a full to a-half proportion, making each dose six and a-half grains, which were given every four hours.* I spent twenty-four hours almost wholly in sleep; calls to rise were still frequent, but the tenesmus was less severe, and, though I retched a few times, vomiting ceased. In a few days appetite began to return.

"During twelve years' practice, I never, in the treatment of dysentery, met with a narcotic to be compared with Dr. Kerr's combination, in relieving general irritability, pain, and, above all, nausea and vomiting. It produces a wonderful degree of comfort, unattended by sensorial disturbance. From thirty minutes after the first dose was taken, my suffering was comparatively nothing. Little hope was entertained of my recovery previous to the first dose, but became sanguine before I had taken the third."† Dr. Bingham, Dr. Brown's medical attend-

* Prior to this all the ingredients were equal.

† The possibility of any future report from Dr. Brown was cut off by his accidental death a few months afterwards.

ant, in a supplement, vouches for the accuracy of the narrative, and relates six confirmatory cases from his own experience.

Dr. Bingham, supplied with medicine by me, treated successfully the sporadic cases which occurred in the following years:—In August, 1862, he, with Dr. Bell, by this time his partner, applied to me, making the following statement:—Dysentery had broken out epidemically in their locality, but not having any of my medicine, they had treated it with the usual remedies; a woman had died the preceding evening, her husband was dangerously ill, and other two were apparently dying. Furnished with a supply, they hastened to their patients. The husband just mentioned, though previously ill for five days, was relieved in less than an hour, and had a rapid recovery. One of those believed to be dying recovered readily, though upwards of seventy years of age; the other died, time to administer only a single dose being afforded. During the remainder of the epidemic there was not a death, though, judging from the severity of the attacks, six or seven would have proved fatal under the ordinary treatment. In the autumn of 1863, dysentery was again epidemic at Ayr, C. W., where Drs. Bell and Bingham resided. Without delay they applied to me for medicine, and treated successfully every case; while the only other medical gentleman in the same village adhered to the ordinary treatment, and out of a smaller number of patients lost five by death.

Dr. Mackintosh, of Hamilton, C. W., has employed the combination in dysentery since 1861, and in all cases with success. From his notes I give the following, on account of the epidemic and generally severe character of the attacks:—

"1864, 15th July.—A child, four years of age, seized two days ago, bloody stools every half hour, accompanied with vomiting and severe pain. Applied hot fomentations, and gave three grains of the squill combination with opium every four hours. These were speedily followed by relief; the child had a pretty good night, and on the 19th is reported quite well.

"17th July.—A girl in the same house, nine years of age, was seized during the night with severe dysentery. Applied hot fomentations, gave five grains of the digitalis combination with opium every three hours. Immediate relief followed, and next day she was convalescent. Six doses in all were given.

"22d July.—A boy, seven years of age, seized yesterday, and now severely affected. Gave three grains every three hours, and by evening he was much relieved. Nine doses completed the cure.

"6th August.—A man, aged thirty, attacked during the night with rigors and vomiting, followed by dysentery. In the morning seven grains were given every three hours. In two days he was quite well.

"12th August.—A man, aged sixty-four; bloody motions every half hour, with nausea. Same doses given as to last patient; next day almost well.

"15th August.—A woman, aged fifty-six, during the night was attacked with severe dysentery. Same doses given. By evening was much better; and by the third day complained merely of weakness.

"17th August.—A woman, suddenly seized with very severe dysentery, visited shortly after; she was then cold and faint, and stools passed without control. Gave seven grains of the digitalis combination, with one-fourth of a grain of morphia (instead of opium), every two hours. After the third dose relief was so great that morphia was altogether omitted, but seven grains of the other combination were continued thrice a day.

"19th.—Almost well."

Dr. Philip, of Galt, late assistant-surgeon H.M. 18th Regiment, has furnished me with the following statement:—"Your remedy was administered by me in six severe, besides a number of slighter cases of dysentery, during the autumn of 1862. Relief was uniformly obtained after one to two doses, and recovery completed within a few days. One of the cases was characterized by profuse sanguineous discharge, and, occurring in a delicate female, would probably have proved fatal but for the timely administration of this medicine. In contrasting the success of treatment in these instances with the fruitless and unfortunate attempts made by myself and others at relief in the severe dysentery of the Crimea, it is impossible not to be struck with the readiness and efficacy of this remedy. Every known system of treatment, I believe, was tried, and the medical history of the compaign shows with how little benefit. Many of the cases which in the Crimea ended fatally were not apparently of a more severe character than some of those which yielded rapidly to your medicine."

Dr. Merritt, who at the time the following occurred was chief of the Medical Department of the Confederate Army of the Mississippi, thus writes to me:—"In August, 1863, when in charge of Camp Jackson, I came into possession of a quantity of your medicine for dysentery. The rapidity of relief and of cure was exceedingly striking. The men were on their feet in a few days, and in worst cases I did not give more than eight

doses of six grains each. My supply lasted ten days, and was administered to about sixty patients, only one of whom died. For some time before I obtained the medicine the deaths ranged from one to three daily, and as soon as it was all expended the mortality resumed the same rate."

A child of the Rev. Mr. Robb, Calabar, Western Africa, in the latter part of July, 1863, was seized with dysentery. At this time the favorite treatment at the mission was large doses of ipecacuan; but this illness resisted every prescription of Dr. Hewan, the medical attendant. By the middle of August the child became so reduced, and death so impressed on the visage, that recovery was regarded by all to be hopeless. At this juncture the parents recollected a packet of the combination which I had given to them. After the second dose the child awoke from a refreshing sleep, easy and tranquil, and the medicine being continued, recovery went on rapidly, without a single untoward symptom. A second attack of dysentery, a few months afterwards, was stopped in a single day. A native African was cured of what threatened to be a severe illness by ten doses.

Fifteen medical men besides myself have used this combination in dysentery; it has been given in the warm region of California, amid the privations and discomforts of a camp in the hot summer of the Southern States, at sea on the Atlantic, in the tropical and pestilential climate of Calabar, and there is a remarkable uniformity in the testimony of all. Relief generally in an hour, restoration to health in a few days, and the great majority cured within a week. A few cases were a little tedious, and a still smaller number lingered three or four weeks; none lapsed into chronic dysentery; and out of about *four to five hundred patients*, though several of the attacks were very severe, as severe as some of the reporters had ever witnessed, *only four died.* One of these was a delicate child; the second, an infant on whom the medical attendant had previously exhausted all the ordinary medicines; and the third and fourth have not been specially reported to me. I have been told of some instances, and a few have occurred in my own practice, of that generally fatal variety of dysentery characterized by profuse bloody discharges, usually attended with severe pain, all of whom were cured without difficulty. The combination fails in chronic diarrhœa, possibly because this disease is usually unaccompanied by lesion of the mucous membrane. I have not seen or had reported to me any disagreeable effect from this remedy, though, judging from the character of its constituents, such is possible, were the doses unreasonably large. The *medicinal* power is

certainly greatly increased by the combination, but not the *poisonous*. Relief speedy and great of pain, far sounder and more refreshing sleep than that from opium, and cessation of discharges, are the usual effects. The nearly uniform success has not given either my correspondents or myself opportunities of trying the treatment by large doses of ipecacuan.

In the course of my experience, several persons afflicted with chronic dysentery have been restored to health—some by the combination containing opium, others by that without. Dr. Ogden, lecturer on materia medica, Toronto, tells me of a case of acute dysentery where, from idiosyncrasy, opium disagreed, but which was speedily cured by the combination, leaving out this drug.

Cases of cholera infantum have been reported to me by medical friends as treated successfully by the combination containing opium. Of summer cholera I select the following on account of its severity. A young man was seized during the night, and visited by Dr. Bingham in the morning. At this time he was violently cramped, skin cold and clammy, voice husky, and pulse feeble. Eight grains of the combination containing opium were given; from this time he vomited no more, a glow of warmth (as in Dr. Brown's case of dysentery) supplanted the cold of threatened collapse, and cramps rapidly abated in severity, though all day he had muscular twitchings. Four more doses completed the cure. Summer cholera has been for some years a rare disease, but all treated by my medical correspondents or myself have readily recovered.

In conclusion, I beg to suggest the medicine now recommended as worthy of trial in Asiatic cholera. If a remedy for this disease is ever to be found, it clearly must be one which shall take almost immediate effect.—*Edinburgh Med. Journal.*

Doon Grange, near Galt, Canada West, 5th April, 1865.

CASES OF CEREBRO-SPINAL MENINGITIS IN POST HOSPITAL, GALLOP'S ISLAND, BOSTON HARBOR, FROM SEPTEMBER, 1864, TO MAY, 1865.

By CALVIN G. PAGE, M.D.

[Reported to the Boston Society for Medical Improvement, June 12th, 1865, and communicated for the Boston Medical and Surgical Journal.]

Case I. L. B. L., recruit, from Pittsfield, Mass., 18 years old, light complexion, blue eyes, and of bilious, sanguine tem-

perament. Was admitted to hospital Sept. 14th, having been unwell for two days previous to reporting at sick call. When first seen, patient was complaining of severe headache, attended with extreme weakness; had been vomiting bilious matter, and had had several evacuations of thick mucus of the consistence of gruel; no pain in the bowels; tongue was badly coated and flabby; pulse at wrist barely perceptible; patient stupid, but not delirious. I ordered hot baths, during which purple spots of irregular shapes appeared on the abdomen, chest, and thighs, increasing in size and color very rapidly; extremities cold and shriveled. By hot applications externally, and stimulants internally, reaction commenced in three hours from the bath, and with it delirium, exhibiting itself by continued incoherent talking as long as the strength lasted, ending in a whisper at the last breath.

Sept. 15th.—Noticed rigidity of the muscles of the neck, with extreme tenderness of spine in lumbar region, and tendency to roll from one side to the other; very restless, constantly talking, and momentarily conscious when spoken to. I noticed, this day, an eruption about the mouth and nose of an erysipelatous nature, the purple spots rather tending to recede or dry, with a circumscribed base, as if about to slough, which did not occur, but they gradually disappeared by the fifth day from their appearance. There was no marked change in patient from this time to his death, which occurred on the 19th. Opisthotonos increased to the last, yielding to no treatment. Allowing the disease to have commenced on the 12th, two days previous to his entry to the hospital, the length of the attack was seven days.

Case II. E. D., recruit, from South Reading, Mass., 15 years old, dark complexion, slight in person, and not a healthy looking boy. Patient was admitted January 29th, complaining of excessive pain in the head, of cold running down the back, and sickness at stomach, vomiting thick bilious matter. Cold applications were made to the head, and blisters to the spine and neck.

Jan. 30th.—Complains of pain "all over;" very sore to the touch, and no diminution of pain in head; is inclined to coma. Face, to-day, is flushed, and pulse 120, slightly tremulous. Blisters drew well; also had a free evacuation from the bowels, but without result. Symptoms rather tending to congestion, which proved to be the case on the following day, as the patient died comatose, and with stertor in breathing towards the close. There was no decided opisthotonos in this case, nor petechiæ,

but from the extreme sensitiveness of touch and extent of pain in the head, I could class it under no other head.

Case III. B. F. W., recruit, from Boston, 15 years old, slight in person, and not of robust constitution. Was admitted to hospital Jan. 9th, 1865, complaining of sickness at stomach, severe pain in the head, and aching in every joint. The whole surface had a peculiar mottled appearance, being much like a faint eruption of measles, the spots more generally diffused, however, than in rubeola; having measles in the hospital at the time, I concluded to put him in the measles ward. Patient was delirious at times during the day, and very restless; pulse 130.

Jan. 10th.—Could perceive no eruption; pulse still 130, and irregular. Had him put in the main ward. No abatement of pain; still delirious and very restless.

11th.—Patient seems brighter, but no better; the pulse increasing and tremulous; face livid; head very hot, with decided symptoms of congestion; no opisthotonos; pupils dilated; breathing labored. Patient died in the early part of the afternoon. Like the preceding case, I could class it under no other head, although the symptoms were indistinct.

Case IV. O. W., recruit, from near New Bedford, 19 years old, a stout, robust, healthy person. The only defect found at time of examination, was a dry, hard, callous-like ulcer on the bottom of the heel, which, from his own account, discharged occasionally a watery fluid, causing no pain, nor in any way interfering with his daily avocation as a teamster. January 28th, patient came to sick call, feeling slight headache and tired. I ordered cinchonated whiskey, and excused him from duty.

Jan. 29th.—Reported this morning as feeling much the same; had vomited during the night, from overloading the stomach with sweetcake and pie. In the afternoon of the same day, the sergeant came to the hospital, stating that the patient was much worse, and was turning purple. I ordered him brought to the hospital immediately. On his arrival, I found the whole surface covered with petechiæ; patient insensible, and evidently too far gone to rescusitate. No morbid symptoms in this case until within thirty minutes of his death.

Case V. L. C., an old soldier, from Plymouth, Ct., 30 years old, was sent to this post for transportation, convalescent from some disease, I know not what. I was called to see the patient in barracks, as having a fit. Found no paroxysm, but a constant tumbling from right to left side, he unable to speak and seemingly unconscious. I ordered him to hospital, and administered

chloroform with the usual effect weile under its influence. Patient vomited bile, with no change of symptoms, and was so restless as to require strapping to the bed. Symptoms yielded slightly under large doses of opium, producing, however, no real relief. He died the day following of congestion. No opisthotonos or petechiæ, but emprosthotonos, with decided cerebral trouble of some kind.

Case VI. A. A. M., recruit, from Cambridgeport, Mass., 19 years old, stout and healthy, of sandy complexion, a teamster. Came to sick call, feeling unfit for duty, but not really sick. Gave no medicine. In the afternoon, came to hospital feeling sick at stomach, with slight drowsiness of head. Gave an emetic, which had, seemingly, a favorable effect. This was at at 4 P.M. At 6, I examined patient and found him, to use his own words, feeling every way comfortable, but cold. I could discover no pulse at the wrist, and extremities were stone cold. I changed his bed to one beside the stove, to which he walked with perfect ease. Could discover no petechiæ, although the steward noticed them when he first came in. No opisthotonos, but decided symptoms of congestion. He died at 9 that evening, having the stertorous breathing similar to the preceding cases.

Case VII. J. E. S., an old soldier, from Concord, N. H., 22 years old, florid complexion, of nervous, sanguineous temperament; subject to epilepsy. Patient was brought here from the boat, having been taken while *en route* for this post. Symptoms were, excessive pain in the head and limbs, and prostration; no vomiting or petechiæ. I applied leeches to the temples, and gave oleum ricini, ℥ss., ol. croton, tiglii, gtt. iij. This was February 15th. The day following, patient complained less of pain in the head, but felt stiffness in cords of neck. Made use of stimulating liniment to neck, and gave pil. hydrarg. gr. vij, at bedtime.

17th.—Is feeling better, but very weak. Ordered stimulating diet, and continued the liniment. On the 20th, patient was able to sit up; still very weak.

21st.—Patient complained more of stiffness of neck and joints of lower extremities; is feverish and wandering, inclining to whistle rather than to talk. Could perceive no swelling of joints, and but slight contraction of muscles; tongue coated and not easily managed. Patient remained much the same for some days. On the 26th, noticed a difficulty in swallowing and a hesitation in answering questions; head more inclined to left side, evincing great pain when moved; countenance troubled,

and had a peculiar stare when spoken to; evacuations from bowels and bladder involuntary, although regular and natural. From this date, patient gradually sank, with no change in character of disease, and died March 17th, 1865, four weeks and two days from first attack. Could discover no petechiæ in this case, but decided opisthotonos of the entire left side, with complete prostration, was present from Feb. 21st. Patient had gonorrhœa when admitted, which continued to the time of his death; also slight swelling of testicle in the early part of the attack.

Case VIII. O. B., old soldier, 20 years old, stout, and to all appearance healthy. Was admitted to hospital February 8th, 1865. Complained of excessive pain in head, neck, and side, to which blisters were applied, and pil. hydrarg., gr. vij, was given at night.

9th.—Head and neck still very painful, patient shrinking from the slightest motion of either. Ordered liniment to neck; also quinia, grs. v., Dover's powder, grs. vij., every four hours.

10th.—The same. Continued treatment. Tongue thickly coated, but moist.

11th.—Ordered pil. hydrarg., grs. vij., at night. Liniment. Patient complains less, but still shrinks from pain; is at times delirious. I used beef-tea and egg punch freely.

16th.—Patient allows himself to be moved, although very sore and weak. As in the last case, the head inclines to the left shoulder, and symptoms every way resemble that case. Patient is of much stronger constitution, and was free from disease of any kind. Patient was discharged from hospital, Mar. 2d, convalescent.

Case IX. J. P., old soldier, from Providence, R. I., 17 years old, rather small and immature, but apparently healthy. Was admitted to hospital, February 10th, 1865, at the time comparatively helpless, with involuntary discharges from bowels and vomiting of bilious matter. Petechiæ were seen on the abdomen, with muscular contractions from head to heels. Delirious most of the time. Blisters were applied to neck and spine, hot stones to feet, and quinia sulph., grs. vij., capsicum, grs. ij., whiskey ℥ij., every three hours during the day. Dover's powder, grs. vij., morph. sulph., gr. ¼, at bedtime.

11th.—Muscles of neck very tense, and head so drawn back as to obstruct the œsophagus. This continued for three days, during which time injections of beef-tea and wine, each one pint, were given every three hours, nights excepted. On the fifth day from the attack, the muscles of the neck relaxed a trifle,

and patient could, with great effort, swallow a little; in doing which, copious discharges of dark, tenacious mucus were produced. From this date, patient continued to improve on stimulating diet alone.

March 1st.—Noticed swelling of parotid gland, attended with pain and loss of appetite, tongue coated, and feverish symptoms accompanying. I gave potass. chl. sol., freely painting the neck with tinct. iodine at night. A full month was embraced in subduing this attack, patient being able to walk by means of crutches.

May 1st.—Acute rheumatism set in, attended with swelling of joints and difficulty of breathing, probably the effects of sudden cold. No fever, no disturbance of bowels, no coating of the tongue, and yet patient could not be moved or touched without screaming. I gave sol. potass. iodidi during the day, and one-fourth of a grain of morphia at bedtime. Generous diet. At present time patient is able to sit up and stand, but not to walk. His chances seem good for recovery. I should have stated that deafness attended the first attack.

Case X. J. B. F., recruit, from Berkshire County, Mass., 18 years old, not a healthy person. Admitted February 18th, 1865, complaining of chills, weakness and slight headache. Gave oleum ricini, ℥ss. Afternoon.—Still complains of feeling cold. Gave quinia, gr. vij., capiscum, gr. ij., whiskey, ℥ij. and ordered a hot bath, which brought out spots on the face and body. Pulse barely perceptible; extremities very cold, and countenance anxious; mind perfectly clear. In all cases thus far the spots have been angular, of no particular shape, and generally from the size of a small bean to that of a chesnut. The prominent symptom in this case was the sensation of cold, as expressed by the patient's constantly stepping out of bed to go to the stove, which he did thirty minutes before he died, death taking place twelve hours from the attack. No opisthotonos, or pain, except in head, and no amount of heat made any impression upon the chilliness. The dilatation of the pupils was very great.

Case XI. C. I., recruit, from New Ipswich, N.H., 18 years old, robust, healthy, and every way sound. Was admitted February 23d, complaining of headache and complete blindness. Tongue coated, and stinging pains in arms and legs. Gave oleum ricini, ℥ss., ol. croton. tiglii. gtt. iij. Noticed spots on arms, legs, and face; also noticed redness of the eyes. In one hour's time the spots, which were more circular than angular, increased from the size of beans to large patches, running

together, especially on the forearms, growing very dark and sore to the touch. Pulse feeble; extremities cold, but patient expressed himself as feeling comfortable, if let alone.

24th.—Spots still very dark and swollen, showing a disposition to slough, having every appearance of sores from caustic potash.

25.—Line of demarkation very distinct, especially on the arms and wrist. On the 26th, skin sloughed out, leaving the whole inner surface of forearm down to fascia raw and excessively painful, suppurating freely. Spots on legs formed thick crusts, discharging matter from the under surface continually. From the commencement of the sloughing, patient improved slowly until near the first of April, when sore mouth and tongue set in, attended by profuse expectoration, similar to ptyalism. This subsided in a fortnight's time, and patient improved rapidly in every respect, excepting the eyesight, which only allowed him to discern objects independently of form.

May 11th.—Patient received his discharge from the U. S. service, which prevented any further observation of the case. There was no opisthotonos in this case, or cerebral disturbance. Secretions and evacuations every way natural and healthy.

Case XII. A. S. P., recruit, from Gardner, Me., 21 years old, very robust and healthy. Was brought to hospital early in the morning of March 20th, insensible, helpless, and very restless; head inclined backwards, but muscles not rigid; tongue badly coated and brown; face very red, and pulse high.

22d.—Eruption about the face, more particularly the mouth and nose; could discover no spots, nor did the patient seem sensible to pain. Patient would pass his water involuntarily, and most of the time was delerious. Symptoms continued bad from the commencement to the time of his death, April 8, 1865.

Case XIII. Dr. G. A. P., recruit, from Jaffrey, N.H., 40 years old, a practising physician, came to this post from Concord, N. H., having attended a case of spotted fever previous to coming here. Excessive pain in the head and limbs; prostration; purple spots on the abdomen, making their appearance on the third day from the first sensation of illness. Patient was admitted to hospital April 11th. Neck stiff, very sore to the touch and inclined to left side. No change in symptoms until April 13th, when the face, directly in front of right ear commenced to swell, and by night had increased up and down, from the temple to the clavicle, embracing the parotid gland, very hard and extensive, and not seemingly painful.

15th.—Pus commenced discharging from the ear, very freely. No fluctuation in the tumor.

17th.—An incision was made at the base of the tumor, also another on the day following, followed by free discharge. During the first two weeks patient seemed perfectly indifferent, would answer indirectly, with momentary consciousness. Patient continued to improve from the commencement of the discharge from the abscess. Most of the time had no control of rectum or bladder.

May 7th.—Was conveyed home convalescent.

Case XIV. J. R., recruit, from Boston, Mass., 38 years old, of delicate constitution, sailmaker by trade. Was admitted March 22d, with pains in whole body; felt so sore as not to bear his weight; cramped all over; inclined to be stupid. No spots perceptible, nor were there any other prominent symptoms. His breathing was stertorous previous to his death, which occurred March 30th, eight days from attack.

Case XV. A. W. F., recruit, from Bangor, Me., musician, 19 years old, stout and healthy. Symptoms as in previous cases. Was admitted April 3d. Pulse very high; neck stiff, and although sensible, could not speak; countenance troubled, and patient very restless. Sodæ bisulph. was given freely, and continued, with no perceptable effect.

4th.—Pulse 100; face flushed, and paralysis of left side.

5th.—Stertorous breathing, with livid countenance. Patient died in the afternoon. No spots or opisthotonos.

Case XVI. W. L., recruit, from Hopkinton, Mass., farmer, 19 years old, was at the time of attack in hospital for measles. Admitted March 6th.

10th, 4 P. M.—Spots came out all over the body; no headache; mind clear. In two hours the whole surface was nearly black, in which state patient died, complaining only of difficulty in breathing. Patient occupied the bed previously used by Case VIII. Whether the disease had any other than a peculiar turn and terminus of measles I cannot say; it certainly differed from anything I ever witnessed. The spots were isolated, and wholly independent of the rubeola.

Case XVII. W. M., recruit, from Roxbury, Mass., 19 years old, healthy. Was admitted March 7th. Died March 10th, having symptoms like the previous cases. Petechiæ on abdomen. No opisthotonos.

Other cases of a mild character have occurred, but hardly deserving mention. I would remark that in all cases, mild or exaggerated, erysipelatous eruptions have occurred on the third or fourth day from attack; and in all cases where the patient was conscious, soreness of the limbs and feet has prevailed, and

in most cases involuntary discharges from the rectum and bladder. In but two instances could anything like contagion be traced.

ANALYSIS OF CASES.

	Amitted.	*Died.*	
1. L. B. L.	Sept. 14th, 1864.	Sept. 19th.	
2. C. B.	Jan. 25th, 1865.	Jan. 27th.	
3. E. D.	" 29th, "	" 31st.	
4. O. W.	" " "	" 29th.	
5. L. C.	Feb. 6th, "	Feb. 7th.	
6. O. B.	" 8th, "		Recovered.
7. B. F. W.	" 9th, "	" 11th.	
8. J. P.	" 10th, "		Recovered.
9. A. A. M.	" " "	" 10th.	
10. E. F.	" 14th, "	" 15th.	
11. J. E. S.	" 15th, "	March 17th.	
12. J. B. F.	" 18th, "	Feb. 18th.	
13. W. L.	March 6th, "	March 10th.	
13. W. M.	" 7th, "	" "	
15. A. S. P.	" 20th, "	April 8th.	
16. J. R.	" 22d, "	March 30th.	
17. J. F. P.	,, 29th, "	April 16th.	
18. A. W. F.	April 3d, "	" 5th.	
19. G. A. P.	" 11th, "		Recovered.

THE FOOD AND THE TEETH.—Observations on the Inorganic Constituente of the Food of Children, as connected with the Decay of the Teeth, and the Physical Constitution of Women in America.

By the late JAMES PAUL, M.D., of Trenton, N.J.

[The following very valuable and instructive paper was read before the District Medical Society, for the County of Mercer, N.J., some years ago, by the late James Paul, M.D., of Trenton. There is so much in it worthy the consideration of the profession and the public, that we deem it of sufficient importance to reproduce it.—*Ed. Med. and Sur. Rep.*]

The subject to which I have the pleasure of directing your attention is, not only in a physiological point of view, one of interest, but in its application to the preservation of health—the tendency to improve the general condition and physical constitution of the human family inhabiting this great continent—a continent abounding, as it does, in all the productions which a bountiful Creator, in his beneficience, bestows on man—cannot be otherwise than of great and paramount importance.

At a period somewhat now remote, the celebrated naturalist,

Buffon, alluding to the animals of this continent, advanced the following opinions:—

1st. That the animals common both to the Old and New Worlds are smaller in the latter.

2d. That those belonging to the New are on a smaller scale.

3d. That those which have been domesticated in both, have degenerated in America.

4th. That, on the whole, it exhibits fewer species.

These opinions, Mr. Jefferson, in his "Notes on Virginia," undertook, and it is generally considered successfully, to controvert; yet, however repugnant to the general idea the opinion as to the tendency of those animals which have been domesticated in America from other countries to degenerate, it is an undeniable and much to be regretted fact, that the human family, and more particularly the female portion of that family, have declined in the vigor and strength of their physical constitution.

I wish not to be misunderstood: I say it is a melancholy fact, too well known to the observant physiologist, that increase of strength, and development of frame, have not been attained by the intermarrying of members of the human family of different nations on this continent; but the reverse is too observable; the physical frame of the female sex has degenerated—calling loudly for the aid of science to arrest an evil of so much magnitude.

Let us for a moment contemplate the female form, as seen on this broad continent. In no country in the world are children more fair and beautiful; and as the young girl grows up to womanhood, we see in her a full realization of that being forming in the hands of Divinity, portrayed by the poet, as seen by Adam in his dream:—

> "Under his forming hands, a creature grew,
> Manlike, but different sex; so lovely fair,
> That what seemed fair in all the world, seemed now
> Mean, or in her summed up, in her contained,
> And in her looks;"—

We see this young and lovely being—the forehead well developed—the countenance, rather elongated, relieved of the harsher outline of some of the European nations—with fragile form, and small, yet well-developed bust, fliting for a few short years among us, and then—yes, then there comes a change. Ere five and twenty summers pass, this flower begins to fade—the rounded form shrinks—the bloom of health decays; and if she escapes the fell destroying angel's death-like grasp, a wreck of former self remains.

Why should this be so? The robust of other countries come to this continent—they live in comfort—their food is excellent in quality—their progeny is like themselves—but even now, in the very first generation, does the degenerating process make itself manifest—the teeth begin to decay; and girls, while yet children, have to visit the dentist to have them cleansed, scraped, and plugged.

Now this brings us at once to the head and front of our subject; and if we can point out the first cause of this decay of what should be as strong as adamant, it may be the means in helping us in our investigation. That there is something radically wrong in our system of rearing the young, to which this misfortune is in a great measure owing, I am free to confess, is my firm opinion. I would indeed it were in my power, in pointing out the evil, to be as successful in detailing the cause, that we may apply the remedy. Still, although perhaps unable to accomplish all I wish, my observations may not be without their weight, and induce others, more observant, more scientific, and more competent to the task, to follow up an investigation so fraught with advantage to our fellow-beings.

It is certainly to be deplored that the females of this continent, descendents of European parents, should be so much afflicted with caries of the teeth—the decay of parts formed of substances which enter into the composition of some of our hardest minerals—marble, bone-earth and fluorspar; and this decay unfortunately occurs in early life—in girls yet at school; and many a young woman, ere she has attained a marriageable age, has had to replace the natural with the unnatural, though more enduring enamel of the artist's formation. This ought not to be: God made all mankind alike; in no portion of the earth are nations found who lose their hands, or feet, or tongue, er eyes; and there can be no cause why the inhabitants of this land should loose their teeth. It is not so in the olden countries from whence the progenitors of the present race have come; nor is it so in the West India Islands, which may almost be considered as part of this great continent. So excellent is the structure of the teeth of savage nations, that some tribes in Africa, I think the Mocoes and Mundingoes, file all the front teeth, so that they shall be separated and form sharp points, the better to tear the uncooked animal food.

One cause of this affliction is, in the mind of many, attributed to the great and sudden changes of temperature experienced on this continent—the thermometer rising and falling 20, 30, and even 40 degrees in twelve hours. But if attributable to these

sudden changes, we know that sudden expansion by means of heat, or sudden contraction by means of cold, causing the particles of which bodies are composed to tear themselves asunder; consequently to crack, break, and fall in pieces. But this is not the case with the teeth of our females; a caries or decay commences most generally in the side of the tooth, extending to the enamel, which is sometimes involved in the destruction; at other times, it is left a crust or shell to snap and break off in small pieces, when unable to resist the pressure of whatever may be placed against it; besides, the teeth are for the most part sheltered from these sudden changes, and kept at a temperature nearly amounting to blood-heat at all seasons. I do not think we can place the general destruction of the teeth, and consequent affliction of the females of America to this cause. I fear we must rather look for it to constitutional weakness, and this constitutional weakness to a deficiency of the inorganic or earthy constituents being taken into the system, more particularly at an early period of life.

If I am correct in this opinion, and reason, philosophy, and a thorough examination of physiological facts in both the animal and vegetable economy, tend far to bear out these views, then if we would try and correct this lamentable state of things, let us commence at the very beginning, and make ourselves acquainted by examining the structure and composition of the teeth, and then we shall be more able to understand what is required to aid nature in their formation and consequent preservation.

First, then, let us make ourselves acquainted with the structure and composition of the teeth. The teeth are nearly allied to bone in structure; both having earthy deposits, intermixed with fibres and cells of gelatine, which, by consolidation, gives form and strength—in the case of bone, to bear the weight of the various parts, and afford protection to the different organs of the body; and in the case of teeth, to cut and grind the food required for the formation, support, and reparation of its various parts.

Now, teeth are composed of three different substances, and these three are disposed according to the purposes required of them; they are, *cementum* or *crusta petrosa*, *dentine* (known as ivory in the tusk of the elephant), and *enamel.* The *cementum* or *crusta petrosa*, corresponds in all especial particulars with bone; possessing its characteristic *lucunæ* or small cavities, and being traversed by vascular and medulary canals, whenever it occurs of sufficient thickness; it is the first cover-

ing of the young teeth, and may be said to invest the fang of the tooth which enters the aveolar process of the jaw. The *dentine*, or ivory, consists of a firmer substance, in which inorganic or mineral matter predominates, though to a less degree than *enamel*. It is traversed by a vast number of very fine cylindrical, branching wavy tubuli, which commence at the pulpy cavity, and radiate toward the surface. The diameter of these tubuli, at their largest part, average about one 10,000th of an inch: their smallest are immeasurably fine; so much so that they cannot possibly receive blood, but it is surmised that, like the canaliculi of bone, they imbibe fluid from the vascular lining of the pulp-cavity, which aids in the nutrition of the tooth. The *enamel* is composed of solid prisms of fibres, about the one 5,600th of an inch in diameter, arranged side by side, and closely adherent to each other; their length corresponds with the thickness of the layer which they form; and the two surfaces of this layer present the ends of the prism, which are usually more or less hexagonal. In the perfect state, the enamel contains but an extremely minute quantity of animal matter. In the centre of the tooth is the soft pulpy cavity, which affords a bed for the bloodvessels and nerves which supply it with life and sensibility.

I shall not enter more minutely into the structure of the teeth, but may briefly state, that like all other structures of the animal body, the component parts are derived and deposited from the blood, by that mysterious and incomprehensible power that selects and deposits the necessary constituents in the formation of the several portions, according to the use required.

Now, in the composition of the teeth, we have first the division into organic and inorganic or earthy matter; and we find that the several substances which enter into the structure of the teeth, differ chiefly as to the earthy matter contained in each.

Chemical analysis of the incisors, or front teeth of man, show that they contain in one hundred parts of each, as follows:—

	Cementum.	Dentine.	Enamel.
Organic Matter----------	29.27	28.70	3.59
Earthy Matter----------	70.73	71.30	96.41
	100.	100.	100.

These proportions will occasionally differ; in some individuals the organic constituents having less than here stated, amounting in the dentine only to 21. The analysis of bone, however, gives a much larger proportion, viz.:—

Organic matter	32.56
Earthy matter	67.44
	100.

Let us now take a more complete analysis, showing what earthy constituents enter into their composition. Analysis of the molar or grinding teeth of man, and of the bones of the arm and leg of a man of forty, show the following proportions:

	Dentine.	Enamel.	Bone.
Inorganic Matter:—			
Phosphate of Lime with traces of Fluate of Lime	66.72	89.82	54.61
Carbonate of Lime	3.36	4.37	9.41
Phosphate of Magnesia	1.08	1.34	1.07
Salts, etc.	.83	.88	2.35
Organic Matter	28.01	3.59	32.56
	100.	100.	100.

Thus we see the very great proportion of certain earths that enter into the structure of the teeth and bone of man, the chief substance being the phosphate of lime, familiarly known as bone earth. We find, too, that whereas in ordinary bone the phosphate of lime constitutes only 54 parts in 100, in the enamel of the teeth it is nearly 90 parts in 100—while the carbonate of lime in bone amounts to 9.41, in the enamel of teeth it is only 4.37; the enamel being literally almost a mineral in substance, having only 3.59 parts of animal matter in 100.

Thus the teeth to be strong and durable, require a large quantity of earthy ingredients, particularly *lime*, to enter into their composition. Let us inquire whence it is derived; and for this we must examine the blood.

To allow of such deposits from the blood, it is first necessary that they should be held in solution in that fluid. You are no doubt aware that the blood circulates to every portion of the body by the action of the heart, which forces a certain quantity, say 2 oz. at every contraction, into the aorta or great canal leading from the left ventricle—that the aorta divides and subdivides into innumerable branches, which are made to ramify to every part of the body, until the extreme branches end in capillary tubes or vessels, the calibre of which is so small as not to allow the red globules or corpuscles of the blood to enter them, but which allows the serous portion to traverse every part of the organized structure, holding in solution all those constitu-

ents necessary and requisite for the formation and reparation of its several parts.

In the serous portion of the blood, then, we find contained the constituents required for the composition of bone and teeth —analysis of 1000 parts of healthy human blood giving, according to M. Lecanu, the following proportions:—

Water	780.15	785.58
Fibrine	2.10	3.57
Albumen	65.09	69.41
Coloring matter	133.00	119.63
Crystalizable fat	2.43	4.30
Fluid fat	1.31	2.27
Extractive matter, uncertain	1.79	1.92
Albumen in combination with Soda	1.26	2.01
Chlorides of Sodium and Potassium; Carbonates, Phosphates, and Sulphates of Potash and Soda	8.37	7.30
Carbonates of Lime and Magnesia; Phosphates of Lime, Magnesia, and Iron; Peroxide of Iron	2.10	1.42
Loss	2.40	2.50
	1000.	1000.

We see by this table, if we subtract or take away the proportion of water amounting to 780 parts, and the coloring matter amounting to 133, we shall leave scarcely 90 parts of organic and earthy material, the salts and earths forming upwards of a 10th—the salts being in proportion to the earths as 4 to 1.

Having then shown the constituent portions of the bones and teeth to be in the blood, the next consideration is, whence are they derived?

Before entering on this subject further, let us for a moment take a broader and more comprehensive view of what must be most interesting to mothers, and of great consequence to the well-being of the infant generation, in a short time, in a very few years, to become in their turn the mothers and fathers of another generation.

The question then presents itself, what is the nourishment or food best adapted and necessary to the wants of an infant, that the foundation may be laid for a strong frame and vigorous constitution? For here, we must recollect, is the starting point in by far the majority of instances. We know that in some cases disease is hereditary—that the offspring unfortunately inherits from the parents constitutional defects; but we also know

that more misery, suffering, and constitutional derangement, are entailed on children by want of care, and improper food in the first years of life, by which their hopes of health are blasted, and they are doomed to struggle through a weary life, to be hurried at last into a premature grave.

Now, that the frame—that is, the bones, muscles, and other portions of the infant—may be fully developed, it is necessary that it should be supplied with nourishment, containing all the constituents required for this important undertaking. And this nourishment, by the all-wise ordering of Providence, is contained in the milk secreted from the mother's bosom.

The infant is entirely dependent on the nourishment derived from its mother, and nature has wisely ordained that the secretion from the mother is its very best food; for we find in the composition of milk—that is, healthy milk, derived from healthy blood—all those ingredients we have hitherto traced as requisite in the formation of the bones and teeth, and not only these, but every constituent required for the life and growth of the individual;—milk containing the albuminous, saccharine, oleaginous, saline, and earthy componds requisite and necessary for the health, strength, and development of the infant child.

How thankful ought we to be to the all-wise and bountiful Giver of all good, for this beneficient, this wonderful provision in nature, by which there shall be secreted from the mother, a fluid so important, having properties blended in intimate connection, to afford the requisite substances for the support, growth, and development of her offspring.

An analysis of cow's milk gives the following proportions of the various constituents; that of human milk is not so elaborate, but contains the average of observations taken at fourteen different times from the same individual, by Simon.

Cow's milk by M. Haidlen.

Water	873.00
Butter	30.00
Caseine	48.20
Milk Sugar	43.90
Phosphate of Lime	2.31
Phosphate of Magnesia	.42
Phosphate of Iron	.07
Chloride of Potassium	1.44
Chloride of Sodium	.24
Soda in connection with Caesine	.42
	1000.

Woman's milk by Simon.

Water	883.6
Butter	25.3
Caesine	34.3
Milk, Sugar, and Extractive Matter	48.2
Fixed Salts	2.3
	1000.

	Maxium of 14 observations.	Minium of 14 observations.
Butter	54.0	8.0
Caseine	45.2	10.6
Sugar and Extractive Matter	62.4	39.2
Salts	2.7	1.6

Now, although these amounts will no doubt vary, under every variety of circumstances, according to the *health*, *exercise*, *passions* and *food* of the mother, yet they show what I particularly wish to impress on your minds, that healthy milk contains all the requisites for the nourishment of the infant—but then it must be *healthy* milk, secreted from healthy blood, and that blood must derive these ingredients from the *food* consumed, otherwise they will be taken up from the structures of the body, and hence the havoc made in nursing females when a due allowance of proper aliment is withheld, and the shrunken body of the famished mother is drained to the last drop, to supply the cravings of the death-like and impoverished offspring.

I have said that the composition of milk in quality and quantity, will vary and depend on circumstances. Now, the mental state exerts a surprising influence on this secretion, and much more than is usually supposed. It may not be irrelevant to mention a few of the cases recorded in our journals,* of the influence of strong mental excitement on this secretion.

"A carpenter fell into a quarrel with a soldier billeted in his house, and was set upon by the latter with his drawn sword. The wife of the carpenter, at first, trembled from fear and terror, and then suddenly threw herself furiously between the combatants, wrested the sword from the soldier's hand, broke it in pieces, and threw it away. During the tumult, some neighbors came in and separated the men. While in this state of strong excitement, the mother took up her child from the cradle, where it lay playing, and in the most perfect health, never having had a moment's illness; she gave it the breast, and, in

* From Carpenter's Physiology.

so doing, sealed its fate. In a few minutes the infant left off sucking, became restless, panted, and sank dead upon its mother's bosom. The physician, who was instantly called in, found the child lying in the cradle, as if asleep, and with its features undisturbed; but all his resources were fruitless. It was irrevocably gone."

"A lady having several children, of which none had manifested any particular tendency to cerebral disease, and of which the youngest was a healthy infant a few months old, heard of the death of the infant child of a friend residing at a distance, with whom she had been on terms of close intimacy, and whose family had increased cotemporaneously with her own. The circumstance naturally made a strong impression on her mind, and she dwelt upon it the more, perhaps, as she happened at that period to be separated from the rest of her family, and to be much alone with her babe. One morning shortly after having nursed it, she laid it in its cradle, asleep and apparently in perfect health; her attention was shortly attracted to it by a noise, and on going to the cradle, she found her infant in a convulsion, which lasted for a few minutes, and left it dead."

"A mother had lost several children in early infancy from a convulsive disorder. One infant, however, survived the usual fatal period; but whilst nursing him one morning, she had been strongly dwelling on the fear of losing him also, although he appeared a very healthy child. In a few minutes after the infant had been transferred into the arms of the nurse, and while she was urging her mistress to take a more cheerful view, directing her attention to his thriving appearance, he was seized with a convulsion-fit, and died almost instantly."

These are interesting cases, and tend to show the great influence the mental affections exert on the secretion of milk, in rendering it deleterious in quality, and unwholesome to the infant.

Returning then to our subject, you will observe by the analysis, that cow's milk differs from that of woman in the proportions of some of the constituents, that it abounds more in butter, but particularly in caseine or cheese; and on the other hand, that human milk abounds more in the saccharine principle, or sugar of milk. Now, this points out a circumstance from which great benefit may be derived. It is of very frequent occurrence that infants are deprived of the natural nourishment of the mother, and diverse opinions are given relative to the food of infants by persons who really know very little about the matter; one recommends a milk diet, another that the infant must be fed on starch and sugar.

Now, to enable the infant to receive a nourishment in every respect similar to the mother, the knowledge of the various proportions which we obtain by chemical analysis, enables us to rectify and produce milk very analogous to human milk from that of the cow, by diluting it with water, in the proportion of about half as much again; that is, to a pint of milk should be added half a pint of water that has been boiled, which will reduce the cheese principle to the proper proportion; add a small portion of cream to restore the proportion of butter, and then add sugar until the whole is distinctly sweetened, and we have a compound, in every respect, similar to the milk from the human breast.

To understand the subject of nutrition, allow me to explain to you, that food should, or must embody two great principles, one to nourish, the other to give heat to the body. And food, when consumed, is applied to one or the other of these purposes. Now, in the process of digestion, the constituents of the food are separated, and arranged in three classes.

1st. All that portion derived from animal food, eggs, the curd of milk, the gluten or adhesive portion of wheat and other grain, and whatever in animal or vegetable food can be rendered into *albumen*—of which the best example that can be offered in illustration is the *white of egg*, which is, in reality, nearly pure albumen—and the principle is, therefore, called *albuminous*.

2d. All that portion of the food derived from vegetables, starch, sugar, etc., that can be converted into *sugar* in the process of digestion. This principle is, therefore, called *saccharine*.

3d. All the fat, butter, oil, etc., which, when deprived of the other substances is left in the state of *oil*, and, therefore, called *oleaginous*.

Now, of these three, the *albuminous* is the *nutrient*, and the *saccharine* and *oleaginous* the *calorifacient*, or heat giving; and chemical analyses show that they vary in composition.

	ALBUMEN.		OLEAGINOUS.
	Eggs.	Wheat.	Mutton Fat.
Carbon	55,000	55.01	78,996
Hydrogen	7,073	7.23	11,700
Nitrogen	15,920	15.92	
Oxygen, Sulphur, Phosphorus	22,007	21.84	9,304

	SACCHARINE.			
	Starch, Arrow Root.	Sugar from Starch.	Sugar of Milk.	Cane Sugar.
Carbon	44.10	37.29	40.00	42.301
Hydrogen	6.18	6.84	6.61	6.384
Oxygen	49.42	55.87	52.93	51.315

[*Continued in the next No.*]

Editorial.

MEDICAL COLLEGES.—The general introductory lecture to the annual course of instruction in the Chicago Medical College, Medical Department of Lake Forest University, was given in the lecture-room of the College on the evening of the 2d inst. The exercises were opened with prayer by the Rev. J. H. VINCENT, and the introductory lecture delivered by J. H. HOLLISTER, M.D., Professor of Physiology and Histology. The lecture was elegantly written, and in sentiment well calculated to interest and profit those to whom it was addressed.

The number of students in attendance at the opening of the term is, at least, one-third larger than in any previous year; and the prospects are good for full courses of instruction in every department of medical science and art.

The chemical laboratory is well-furnished; several important additions have been made to the museum, more especially for the purpose of illustrating the courses on anatomy, physiology, microscopy, and surgery: and the wards of Mercy Hospital are crowded with patients, furnishing an ample field for clinical instruction. The full five months' lecture-term, with a supplementary summer reading and clinical-term of four months; the arrangement for enabling the student to make his courses progressive instead of repetitional; and the full daily course of true clinical instruction in medicine aud surgery, are advantages

that are rapidly becoming known and appreciated by the profession.

The general introductory lecture in the Rush Medical College was given on Wednesday evening, the 4th inst., by Prof. J. V. Z. Blaney, who having terminated his service in the medical department of the army, resumes the duties of Professor of Chemistry, as formerly. His lecture was well written and well received by the class.

The number of students in attendance was large, and the College represented to be in a prosperous condition. Its greatest defects are the shortness of the lecture-term, and the very limited advantages for clinical instruction. For though the Professors of Surgery and Practical Medicine have each appended to their titles that of "Clinical Professor," yet neither has a place in any hospital in the city, or any means for clinical instruction, except the simple college dispensary.

Medical Colleges in Cincinnati.—Since the death of Dr. A. H. Baker, the faculty of the Cincinnati College of Medicine and Surgery has been reorganized, with Dr. Wood in the Chair of Surgery.

The Miami Medical College has abolished lectures altogether, and in their place demand simply a matriculation fee of $15.

Berkshire Medical College.—Dr. Horatio R. Storer, of Boston, has been appointed to the Chair of Obstetrics in this institution.

Explanation.—The article on "Beebread as a Diuretic," in the September number of the Examiner, and the one on "Forcible Dilatation of Strictures of the Urethra," in the present number, were written in 1859, and sent to me about the time that I transferred the *Chicago Medical Journal* to Dr. D. Brainard. They were accidentally placed among some papers where they were not discovered again until a few weeks since. We have chosen to give them publicity at this late period, because the subjects to which they relate are still of practical interest to the profession. That relating to strictures has no

name attached to it, but it was doubtless written by Dr. EDWIN POWELL, of this city, who was, at that time, one of the surgeons to the Mercy Hospital.

THE MORTATITY STATISTICS FOR AUGUST.—The Mortality report of the City of Chicago, for the month ending Aug. 31, has been prepared by the health officer, T. B. Bridges. The entire number of deaths was 464, being a decrease of 35 over the corresponding month of last year, notwithstanding the great increase in the population.

DISEASES.

Apoplexy,	2	Inflammation of Lungs,	7
Accident,	15	Inflammation of Stomach,	1
Brain Fever,	5	Jaundice,	1
Bilious Fever,	2	Liver Complaint,	1
Burned,	1	Lung Fever,	3
Congestion of Brain,	4	Measles,	1
Congestion of Lungs,	2	Marasmus,	4
Congestion of Liver,	1	Nervous Fever,	3
Congestive Chills,	1	Old Age,	7
Cholera Morbus,	3	Paralysis,	1
Cholera Infantum,	14	Sunstroke,	1
Cold,	1	Scalded,	1
Cancer,	1	Shot by Police,	2
Consumption,	31	Suppressed Menstruation	1
Cramps,	12	Suicide,	3
Croup,	8	Spotted Fever,	1
Childbirth,	2	Scarlet Fever,	11
Convulsions,	5	Summer Complaint,	114
Drowned,	6	Stillborn,	12
Diphtheria,	9	Spasms,	2
Dropsy,	11	Small-Pox,	1
Dysentery,	25	Teething,	22
Diarrhœa,	22	Typhoid Fever,	13
Heart Disease,	3	Unknown,	39
Hemorrhage,	3	Whooping Cough,	3
Intermittent Fever,	2		
Inflammation of Brain,	1	Total,	464
Inflammation of Bowels,	8		

AGES OF THE DECEASED. — Under 5 years, 312; over 5 and under 10 years, 12; over 10 and under 20, 25; over 20 and under 30, 32; over 30 and under 40 42; over 40 and under 50, 17; over 50 and under 60, 9; over 60 and under 70 6; over 70 and under 80, 5; unknown, 4. Total, 464.

NATIVITIES.

Chicago,	289	England,	4	Sweden,	3
Other States,	53	Germany,	32	Wales,	2
At Sea,	1	Ireland,	48	Unknown,	10
Bohemia,	3	Italy,	1		
Canada,	7	Norway,	7	Total,	464
Denmark,	3	Scotland,	1		

DIVISIONS OF THE CITY.

North, 127 | South, 139 | West, 198 | Total, 464

Appended is the official mortality report for the month of September, 1865, as taken from the records of the health officer. It will be seen that the statistics, as compared with the month preceding, show a large decrease of the number of deaths, due, perhaps, mainly to the cooler weather experienced during the latter part of the month. But a feature not less gratifying is the fact that, with a population largely increased over that of 1864, the deaths for September of this year show a falling off of 48, as compared with the same month last year. This is doubtless to be attributed in large measure to a better system of sanitary precautions, and to the fact that some miles of sloughs and filthy streets have within the past year been covered from sight and smell with the pavements which have been put down in various sections:—

DISEASES.

Apoplexy,	1	Inflammation of Lungs,	2
Accidents,	11	Intemperance,	2
Brain Fever,	4	Jaundice,	1
Billious Fever,	6	Liver Complaint,	1
Congestion of Brain,	3	Lockjaw,	1
Cholera Morbus,	6	Nervous Fever,	3
Cholera Infantum,	4	Old Age,	7
Cancer,	1	Sunstroke,	1
Cerebro-Spinal Meningitis,	1	Ship Fever,	1
Consumption,	31	Scarlet Fever,	12
Cramps,	18	Summer Complaint,	54
Croup,	14	Stillborn,	6
Childbirth,	5	Spasms,	1
Convulsions,	13	Small-Pox,	1
Drowned,	4	Teething,	16
Diphtheria,	11	Typhoid Fever,	14
Dropsy,	11	Typhus, "	2
Dysentery,	19	Tabes Mesenterica,	1
Diarrhœa,	9	Whooping Cough,	2
Heart Disease,	2	Worms,	1
Intermittent Fever,	5	Unknown,	31
Inflammation of Brain,	3		
" " Bowels,	4	Total,	346

Ages of the Deceased.—Under 5 years, 189; over 5 and under 10 years 4; over 10 and under 20, 12; over 20, and under 30, 28; over 30 and under 0, 40; over 40 and under 50, 17; over 50 and under 60, 14; over 60 and under 0, 12; over 70 and under 80, 6; over 80 and under 90, 1; unknown, 3. Total, 346.

NATIVITIES.

Chicago,	193	England,	4	Sweden,	9
Other States,	41	Germany,	38	Wales,	1
Bohemia,	3	Ireland,	40	Unknown,	4
Canada,	2	Norway,	6		
Denmark,	2	Scotland,	3	Total,	346

DIVISIONS OF THE CITY.

North,	94	South,	98	West,	154	Total,	346

ANNOUNCEMENT OF THE CLEVELAND CHARITY HOSPITAL MEDICAL COLLEGE.

SESSION 1865-6.

FACULTY.

JAMES DASCOMB, M.D., Professor of Chemistry and Toxicology.
A. P. DUTCHER, M.D., Professor of Principles and Practice of Medicine.
L. FIRESTONE, M.D., Professor of Obstetrics and Diseases of Women and Children.
J. H. SALBURY, M.D.. Professor of Physiology, Histology, Pathological Anatomy.
R. N. BARR, M.D., Professor of Anatomy.
GUSTAV C. E. WEBER, M.D., Professor of Civil and Military Surgery.
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W. J. SCOTT, M.D., Professor of Materia Medica, Botany, and Pharmacy.
A. METZ, M.D., Professor of Ophthalmology.
J. C. SCHENCK, M.D., Demonstrator of Anatomy.

GUSTAV C. E. WEBER, M.D., *Dean.*
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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXXVII.

CASE OF SCHIRRUS.

By R. S. LEWIS, M.D., of Dubuque, Iowa.

Editor Chicago Medical Examiner,

Dear Sir:—If the following notes of a case, which came under my care, are worthy of a place in your valuable journal, you are at liberty to publish them. It has been a case of considerable interest to me, from its being so rare, and its occurring to a maiden lady. My opinion is, that it is a case of schirrus, from the tumor being hard and lobulated.

Oct. 9th.—Miss M——y, Irish, supposes her age to be 45 or 50 years, called to consult me for what she called falling of the womb; has been more or less troubled for two years past. She had walked five miles, from the country. I advised astringent applications, with the view of introducing a pessary.

Oct. 10th.—She attempted to walk back to the country, but the tumor had forced itself so far into the world that she was obliged to desist, and returned to the city, and called me to visit her. Found her suffering severe pain; and, on examination, I found the uterus protruding six inches beyond the vulva. I called Dr. W. Watson to see her with me, and, as she had not passed urine for 24 hours, we concluded to draw it off by catheter. In passing the catheter, she strained slightly, and

forced the whole of the uterus into the world. About 9 P.M., Dr. WATSON armed a needle with a double ligature of strong silk twist, and thrust it through the neck of the tumor, tying it as tight as he could draw it on both sides. Some feeling of faintness came on, but soon passed off. The tumor was perfectly insensible, and the patient experienced no pain in passing the ligature through it; and the only inconvenience was its weight, producing a dragging sensation. Has experienced more or less uneasiness from it for two years past, and of late has been down occasionally, but has been easily returned into the vagina. Had no difficulty in passing the finger into a cul-de-sac, which terminated abruptly, after the tumor had come down. The neck of the uterus, where the ligature was passed, did not exceed an inch through.

Oct. 11th.—Had slept ordinarily well during the night; suffered no pain; pulse feeble, 100 per minute. Ordered pul. Dov., 10 grs., every three hours. Called again towards evening. Had some vomiting, evidently the effects of the Dover's powder. Tightened the ligatures. After leaving, her friends removed her about a mile, to another part of the city, against positive orders.

Oct. 12th.—Tightened the ligatures. Feels easy; stomach quiet; passed urine freely, for the first time since the ligature was applied; pulse still feeble, 100 per minute. Ordered port wine. No tenderness over the abdomen. Called again, in the evening, and tightened the ligatures.

Oct. 13th, 8½ A.M.—Found the ligatures loose, and on drawing the one on the right side, it cut through and came away; drew the other tight, and cut away the mass, which measured 9 inches in length, and 5 inches through, in its largest part; lobulated, intensely hard. The patient expressed great satisfaction in being relieved, and turned on her side. Ordered ext. of bark and iron, dessert spoonful, every three hours, in a glass of port wine; also a liberal allowance of beef-tea.

Oct. 14th, 9 A.M.—Passed a comfortable night. Pulse 88 per minute. Ordered pil. blue mass and ext. colocynth, one every four hours, until the bowels are moved. Continue medi-

cine as before; also beef-tea. The ligature had retracted within the vagina. Passes urine freely.

Oct. 15th.—Feels somewhat exhausted from the movements of the bowels. Ordered opi., grs. j, ipecac, grs. j, sub-car. soda, grs. ij, repeat every two hours if necessary, to quiet the bowels. Ligature came away; no discharge from the vagina; appetite improving. Continue medicine and wine.

Oct. 16th.—No particular change, except the skin is moist; feels stronger, sits up for half an hour at a time, without fatigue.

Oct. 17th.—Feels refreshed, from a good night's rest; appears cheerful; pulse 98 per minute. Cleanse the vagina with sol-chlorate potas., ℥j, aqua, ℥viij. Continue medicine and nourishment.

Oct. 18th, 19th, and 20th.—Improving rapidly from day to day; pulse 98 and soft; sits up; moves about her room.

Oct. 21st.—Discharged. Moved into the country, feeling well, except weak.

ARTICLE XXXVIII.

CASE OF POISONING WITH ARSENIOUS ACID.

Reported to the Chicago Medical Society, by R. C. HAMILL, M.D.

Published by request of the Society.

June 20th, 1865.—Mrs. H., an Irishwoman, aged 25 years, procured at a drug store, on State street of this city, about one ounce of arsenious acid, mixed it in a teacup nearly full of cold water, stirring it well with her finger, then drank, immediately, the whole of it, with the exception of what remained in the bottom of the cup. She did not wait for it to settle, and, according to her account, there was not more than one or two drachms left in the vessel, so that she must have swallowed six or seven drachms. She coolly informed a neighbor that she had taken poison, left a message for her husband, and resigned herself to her bed to await the issue. I was summoned to her bedside, about 1 o'clock P.M., a half-hour after she had swallowed the

poisonous draught. She complained of burning pain in the stomach, and pain in the head; pulse 50 and soft. I sent her husband to the nearest drug store for the hydrated per-oxide of iron and a bottle of lime-water. A mustard emetic was given immediately, which emptied the stomach in less than five minutes of more than a pint of semi-fluid ingesta and mucus. She had not eaten anything for more than 24 hours. Her husband returned, bringing only the lime-water—℥iv were given immediately. The hydrated per-oxide of iron was eventually procured, at Dr. Mahla's drug store, on State street. and about 50 minutes after taking the arsenic, the first portion was given. (The preparation of iron was fresh, and *moist* or *pulpy*.) One tablespoonful was administered every five minutes, until four or five portions were taken, and the residue of five ounces was given, one tablespoonful every ten minutes.

At 4 o'clock P.M., she was stupid, extremities cold and numb, pulse small and thready, increased pain and burning in the cardiac portion of the stomach, pain and tenderness over the entire abdomen, and muscular soreness of the legs. Her stomach bore the iron well until she had taken 5 oz., when she refused to take any more, complaining of its weight in the stomach. Tablespoonful doses of lime-water were given every 30 minutes, until 8 o'clock, when I again saw her. She had had three spasms during the last hour, the first one very severe, the second and third consecutively lighter. I remaned a half-hour, during which time she vomited twice, throwing up a little bloody mucus each time. She complained of constriction of the œsophagus, and had a slight spasm, confined to the muscles of the thighs and legs. I ordered infusion of slippery elm bark to be freely drank, and the lime-water to be continued through the night at intervals of one hour—her husband to report to me at 11 P.M., which he did, to the purport that she had not vomited after the first draught of the elm infusion; no more spasms; had slept for almost one hour.

21st.—Tongue and fauces very red; gums swollen and sore; free secretion of saliva, as if salivated; complained of cutting pains through the bowels; pulse fuller and regular. Had slept

three or four hours during the night. No appetite—drank a half cup of black tea for breakfast. Ordered barley-water, with which, and the elm infusion, she was to relieve her thirst, which was urgent, during the day. She took no more medicine, except a solution of sulph. magnesia with morphine, on the 22d, to move the bowels. On the 26th, she was able to attend to her domestic duties.

Foreign Correspondence.

BRIEF NOTES ON THE CHOLERA AT CONSTANTINOPLE, 1865.

CONSTANTINOPLE, Aug. 28th, 1865.

DEAR DOCTOR:—For nearly two months the cholera has raged with great violence in this city. My opportunities for observing the disease have been considerable. It is now four weeks since the disease appeared in that part of the city where I was laboring. Since that time, I have been in constant attendance on cholera patients, having, together with the Rev. Mr. LONG, a Methodist missionary, devoted my whole time to the care of the sick. In the notes I shall make, I will confine myself mainly to what has come under our own observation. A few remarks, by way of introduction, may help you to understand what follows.

1. The khans of Constantinople are large stone buildings, surrounding a court. These buildings vary in size, position, cleanliness, &c., &c. Some of them contain 300 rooms, and will accommodate 3000 to 4000 persons. Others contain only 30 or 40 rooms. The one in which we labored has 175 rooms, and, before the cholera broke out, had a resident population of 2000 persons. These persons are nearly all adult males, who come to Constantinople from the far interior, to do business here. A few of these club together and take a room in a khan. If in good circumstances, three or four will occupy one room; if

poor, sometimes as many as fifteen or twenty persons occupy one room. No one knows how many of these khans there are in the city, but there must be several hundred. I should roughly estimate the whole number of persons resident in such khans at 200,000. It is more rather than less than this number. Many of these rooms are very damp, and the air very bad. An open sewer came into one corner of the khan where we were, and deposited its contents into a large tank or hole which had no outlet. You can imagine what exhalations arose, and still arise, from that place. From this brief description, you can easily see that a densely crowded khan is a rare field for cholera.

2. Mr. Long and I had a good room at one of these khans, where we met daily, attending the sick, administering medicine, giving advice, and making ourselves generally useful. We generally visited the patients together, consulted in regard to the treatment, in all respects sharing the labor and responsibility.

3. The natives of this country have an idea that a man cannot be considered sick until he is brought *down to his bed;* that he is well as long as he can keep on his feet. Many who have been attacked with cholera diarrhœa have kept on their feet, and sometimes even at their work, until the disease has exhausted their strength and they have come to the borders of the grave.

4. We have attended just 102 cases of those who were in bed when we called. These were bad cases, the symptoms plain; a number of them being in the collapsed state, and past hope, when we began to attend them. Of the 102, 18 have died; all the others have recovered, or are recovering. Besides these, we have given medicine to a large number, probably 350, who have come to our room with cholera symptoms, either diarrhœa or vomiting, or both. Of these, I presume, not 3 per cent have died.

5. The circumstances under which we have labored have been unfavorable, with two exceptions. As these men are away from home, and most of them poor, *proper nursing* has been impossible. I have already mentioned the dampness of the stone

rooms, and the bad air; these men are not cleanly in their persons; they do not change their clothes often; lie down at night in the same clothes they have worn all day; are careless in all their habits, but especially in regard to their diet.

The two favorable exceptions are:—(1.) That the patients have generally *obeyed our directions.* Of those who have died, probably five out of six have not followed our instructions strictly. (2.) Most of our patients have been men in the *prime of life;* they have had a great deal of vital power to resist disease, and to recover after the disease is checked. We have noticed that old persons and persons affected by any other disease, especially if chronic, are prntty sure to die if attacked by cholera.

I will now give some of the symptoms, as we have observed them; then some of the remedies; and, finally, a number of illustrative cases.

Symptoms.

The disease appears to consist of two stages. When first attacked, the patient has a diarrhœa, this causes little or no pain; the discharges are like rice water, or clear water with little white particles in it, like the pulp of a white turnip; the discharges are few or many, according to the violence of the attack; pulse quick; mind active and restless. The diarrhœa is often accompanied by vomiting a yellowish water. When there is both diarrhœa and vomiting, the attack is more severe, and the case more dangerous, than when there is only diarrhœa. If these symptoms are not promptly checked, the strength of the patient will be exhausted in a few hours, and he will pass into the second stage.

In the second stage, there is not much diarrhœa, and but little vomiting; the patient's hands, feet, and limbs become cold; pulse feeble; skin on the fingers shrivelled; color of the hands and feet dark, as if the blood had settled in them; eyes heavy, sunken, and often turned up, showing much of the white of the eye; mind dull and insensible. In almost all cases, in both stages of the disease, there has been more or less fever, sometimes high and violent, sometimes low and heavy. The

patients, almost without exception, have complained of great internal heat, and have *begged for water*. This has been true, even when their limbs have been quite cold. This raging thirst is one of the most marked symptoms of cholera, and one of the most difficult things to control. These are the most general symptoms. Of course there are exceptions, and, in some special cases, there are symptoms not mentioned at all above, generally arising from peculiarities in the individual, but in all cases the attack begins with vomiting or diarrhœa. If these are not checked, the patient will certainly die.

Remedies.

Our main reliance has been upon a mixture composed of equal parts of laudanum, tinct. of rhubarb, and spirits of camphor. The ordinary dose is 30 drops, but when a second dose has been necessary, we have generally doubled it. We have often given 60 drops, or a large teaspoonful, for the first dose, when the case was severe. In two cases, where there was both severe vomiting and diarrhœa, I gave 90 drops the first dose with the best effect; both patients recovered. This medicine is intended especially for the diarrhœa. When it has been difficult to check the vomiting, we have given another mixture, which we call "Mixture No. 2." It is composed of equal parts of tr. opii, tr. capsici, tr. sem. cardamoms, and tr. zingiberis. This "No. 2" has often proved very efficient: dose, 30 to 40 drops, or more, according to circumstances. We have put strong mustard plasters immediately, in almost all cases, on the feet and stomach. When the feet and arms have been cold, we have had them rubbed rapidly with rum or brandy, have applied bottles of hot water or hot bricks, and have taken other means to produce heat and a circulation of the blood in the extremities. In many cases, these external applications have had a good and decided influence. In a few cases, we have stopped the diarrhœa by injections of starch and laudanum. It has been necessary to forbid the use of water *entirely*. Many of the patients who have persisted in the use of water have died; others have been saved with great difficulty. Of course, the patient should eat nothing until the crisis of the disease has passed, and the

patient begins to recover. Here has been one of our greatest troubles; the natives think that unless they take a large supply of food they cannot recover their strength. Several have thus brought on fatal relapses.

Illustrative Cases.

Case I.—Hagop, an Armenian, from Yozgat. This was the first case I had. Age, 25. Was in the second stage when I first saw him; had been down 24 hours with diarrhœa and vomiting; had taken no medicine; had severe cramps in his legs; hands and feet cold and dark-colored. I gave him large doses of mixture No. 1 and brandy; put two men to rubbing his legs and arms; pulse very low; we checked the vomiting, and the rubbing removed the cramp. I worked over him three hours; left him, towards evening, to go home. Soon after I had gone, his friends called a barber and bled the patient, and he died in a short time. (In this country, barbers bleed and draw teeth.) I felt special interest in this case, as he was an only son. The old father was with him, and begged hard that we should try to save his son's life. The immediate cause of his death was the bleeding.

Case II.—Marderos, a boy, 14 years old, Armenian; was passing into second stage, or collapse, when I first saw him; had a high fever, great heat internally, but feet and hands soon became cold; begged incessantly for water. Gave mixture No. 1, checked the diarrhœa, put mustard plasters on feet and stomach, rubbed him a great deal with rum; two men worked over him constantly for several hours. Next morning he was better, but had a low fever. He recovered slowly, but is now well.

Case III.—Sdepan, brother of Marderos. He assisted in the care of M., and became very much exhausted; was taken with violent vomiting and purging, which had continued three hours when I saw him. Gave him a strong dose of No. 1, which he immediately threw up; in a few moments, gave him a second dose, followed by a little brandy; made him lie flat on his back; he retained this dose, which checked the disease. He recovered with very little fever; in three days he was about his room.

Case IV.—A *hamal*—burden-bearer. (As I shall mention

this class of men often, let me say that they are men of immense physical strength; the loads they sometimes carry on their backs are enormous, weighing from 200 to 600 lbs. Of course they are men of good health. Most of them are Armenians, from Van.) A man of great size and strength, in second stage; hands and feet cold and blue; voice thick; mind dull; his whole body stiff and hard; had taken no medicine; was lying between an open window and an open door, with a strong draft of wind passing over him; his companions were rubbing his feet and hands. I considered him beyond hope. Gave him 60 drops of mixture No. 1, and a large dose of brandy; left brandy to be given him every half-hour during the night. Next morning, went to his room, expecting to find him dead, when he saluted me with a "good morning, Sir!" His companions said that, about midnight, he "opened his eyes, sat up, and asked for a bowl of water to wash his face." He recovered without any relapse, and with very little fever.

Case V.—Another *hamal;* passing into collapse when I saw him; gave the usual remedies, and put mustard plasters on his feet, arms, and stomach; disease checked, but his thirst was so great that in the night he crawled to a jug of water and drank freely, which brought on a relapse; both the diarrhœa and vomiting returned. The next day he was very low, stupid, dull fever; pulse very feeble. Gave him brandy in large doses; put men to rubbing his limbs with rum. Symptoms checked, but his strength was gone. The third morning he was alive, but his body was covered with little pimples and festers; very feverish; persisted in drinking water during the previous night; had had two discharges. Died on the third night. I feel quite confident that he would have recovered if he had obeyed our directions.

Case VI.—An Armenian carpenter, old man; while at work on a building was taken with a diarrhœa, but slight; seemed struck down by heat; brought into the khan about 3 P.M. I gave him mixture No. 1. He had a burning fever; great thirst; begged for water; respiration very difficult; had no more diarrhœa, but died the same night, about nine hours after he was first attacked.

Case VII.—A Bulgarian boy, 17 years old; had been sick when we first saw him, about ten hours; had violent vomiting and purging; was entirely exhausted; eyes turned back and sunken; feet cold; skin shrivelled; his whole appearance indicating that death would follow very soon. Gave him a dose of mixture No. 2, which he immediately threw up, with a great quantity of yellowish water. Gave him another dose, with two teaspoonfuls of brandy; put mustard plasters on feet, arms, and stomach; disease was checked, but typhus followed. After a sickness of thirteen days he was able to leave his room.

Case VIII.—A Greek tobacconist, 25 years of age; strong, very healthy; attack sudden and violent; had diarrhœa and vomiting. We did not have the exclusive charge of this case; when others had attended him for some time, and there seemed no hope of his recovery, we were called. We applied mustard plasters to his feet, arms, and stomach, gave him mixture No. 1 and some brandy; his feet were cold; applied hot bricks, bottles of hot water, &c., to his limbs, and had them rubbed. He was attacked early in the morning; when we left him, about 5 P.M., there seemed some hope of his recovery, as the discharges had ceased. As we left the room, we met a Jew doctor, who said he must be *bled*. We told him that if he was bled, he would die. After we left, the Jew M.D. bled him, and he died almost immediately.

Case IX.—A Russian Armenian, an old man, had no one to take care of him; when I found him he had a jug of water by his side, from which he drank freely; he had both vomiting and diarrhœa; both were checked by the usual methods, but he would not desist from drinking water. The next morning he was alive, but the jug of water, which I had removed, was again by his side. His voice was thick and all his symptoms were bad. He was entirely alone, and so he died, before dark, having been sick nearly two days.

Case X.—Turkish *khoja*, or teacher, 35 years old, strong, in the prime of life; passing into the second stage when called. Mixture No. 1, mustard plasters, brandy, and rubbing saved him. The muscles of his legs were cramped, as if in knots.

A very marked illustration of the influence of medicine—we only gave him medicine once.

Case XI.—Turk, young man; had been sick twelve hours when we saw him; did not know how many discharges he had had, he had not counted them, thought 15 or 20; pulse low; whole system much depressed and exhausted. The father, in his ignorance, had given him as much water as he wanted, but said, "as soon as he drinks he either vomits or his bowels move." 60 drops of mixture No. 1; mustard plaster; (the old man made a plaster long enough to go clear around the boy's body.) When we returned, after seeing him the first time, and found such a monster plaster ready, we laughed not a little, but told him to clap it on, which he did. The boy recovered.

Case XII.—An Arab, 25 years old; symptoms very bad; diarrhœa, vomiting; feet becoming cold. We gave him a large dose of No. 1, and a good dose of brandy; ordered the mustard plasters and rubbing. In three days he was about his business.

Case XIII.—A poor Armenian boy, about 17 years of age; passing into second stage. Dr. Pratt, an experienced missionary physician, saw him; said he thought there was little use in giving him medicine. Ordered a strong dose of No. 2, with brandy in large doses, every twenty minutes, until he began to improve. Put on the mustard. Much to our surprise, he recovered.

I might go on and fill several sheets with such particulars, but have not the time, and perhaps it would add nothing to the value of these notes. I fully intended to give you the particulars of at least 25 cases. All I can now do, is to "close with a few remarks."

1. Pardon the imperfection of what I have written. I know but little about medicine and medical terms. Perhaps there will be nothing new or peculiar in all I have said. I have written only as an *observer* of actual cases of cholera, and not at all as one competent to treat the disease, or to describe it.

2. My observations have convinced me that the operations of the mind have great influence in bringing on, or in keeping off the disease. I have known several instances where fear seems

to have been the principal or exciting cause of the disease, while very few are attacked whose minds are entirely free from fear and anxiety.

3. When the remedies are applied *early* in the first stage of the disease, it can be easily controlled, as a general rule. When not till the patient is in the second or malignant stage, success is very doubtful.

4. From the time the cholera first came here, there has been an impression that rum, brandy, &c., would keep it off; the consequence has been, that about three-fourths of the population went furiously to drinking bad New England rum, and all other kinds of liquor they could lay their hands upon. The effect has undoubtedly been very bad.

5. It is impossible to estimate the number of deaths by cholera, in this city, during the past two months. The published official statements are notoriously false, being far below the truth. One of our friends, a medical man, who is more or less connected with the Government, says he was one day in the office of the Grand Vizier, or Secretary of State, and saw there the true official summary of the whole number of deaths for the previous Monday. This number included all the suburbs of the city, and amounted to 1879, for that day alone This was some days after the crisis of the pestilence had passed. Many other facts have come to our knowledge to confirm his statement, but I will not mention them now. My impression is, that if we should take 500 as the average number of deaths per day, for 60 days, we should be below, rather than above, the truth. This gives 30,000 as the whole number. Many place it as high as 58,000. The desire of the Government to prevent a panic, has kept them from publishing the true returns. It may be doubted whether the Government itself knows the whole truth.

PARIS, July 15th, 1865.

DEAR DOCTOR:—Since my last letter, Europe has been startled by the appearance of the cholera in Egypt and along the shores of the Mediteranean Sea. It has broken out with great

force at Constantinople, and seems to be spreading. In this city, and in London, there are many cases of cholerine, and in the Valle de Grace a case of Asiatic cholera has been reported. Other cases are said to have occurred in the city.

In former visitations, the cholera has progressed regularly from India, along the usual routes of travel. The present epidemic seems to be exceptional in this respect. Its first appearance was among the pilgrims returning from Mecca. Sudden deaths were observed among those who first made their appearance at Cairo and Alexandria, but the first recorded cases occurred, at the latter place on the 10th of May, and at the former on the 26th of the same month.

It is well known, that every faithful Mussulman considers it a sacred duty to make, at least once in his lifetime, a pilgrimage to the holy city, the accomplishment of which gives him a special claim to sanctity. During the closing portion of this pilgrimage, he imposes upon himself the severest privations; walks barefooted and bareheaded, with shaven crown, and with no protection, beneath the burning rays of a tropical sun; religiously abstains from destroying the prolific vermin engendered amid the filth of the motley crowd of Asiatics, Africans, and Europeans, and restricts his diet to the poorest and coarsest fare. From 150,000 to 300,000, after these long fatigues, fastings and exposures, crowded into the smallest possible space, and wrought up to the highest pitch of excitement, join in the religious ceremonies which terminate in the sacrifice of as many sheep as there are worshippers. They may neither eat nor sell the offering, and the vast heap of slaughtered animals, with the thousands of human bodies, fester in the hot sun and breed pestilence and death, bringing with it the martyr's crown to the weary followers of the Prophet.

It is not strange that epidemics should be developed under such circumstances, and especially this year, for I learn that the usual appropriation of $60,000 to the Governor of Mecca, for the purpose of improving the sanitary condition of the city, has been withheld. The disease continued to increase in Cairo and Alexandria until the waters of the Nile began to rise, and, at last accounts, the mortality was diminishing.

During the last year, the cholera has been more than usually prevalent in India, but has not extended westward, nor has the disease developed among the pilgrims, so far as I can learn, extended eastward. In fact, so far, it seems to be confined to the basin of the Mediteranean Sea. I think it likely that Northern and Western Europe will escape this year, and it is possible, though I think it not probable, that the coming winter may destroy or render inert the producing causes of the pestilence.

Of one thing, however, I am quite certain: Europe is ripe for the development of epidemics. In Russia, during the Spring and early Summer, a disease of a typhoid character has been prevalent. This has been called the Russian plague, but is only a modified form of the fevers of Liverpool and Naples, mentioned in my previous letters. In London and Paris, the same class of diseases are now epidemic; while in Prussia and Central Europe, cerebro-spinal meningitis has prevailed to an alarming extent. There is, therefore, a general tendency to epidemics. The vitality of the great mass of the people seems to be lowered; diarrhœa and dysentery have been more than usually common in all the large cities, and the percentage of mortality from these diseases much above the average. There is, therefore, I think, reason to fear that Northern and Western Europe will suffer from the cholera during the coming year. In fact, the disease already exists in Paris and London. Strict quarantine measures have been instituted, but they have not prevented the fiend from leaping, at one bound, from Ancona to the banks of the Seine, not, it is true, as an epidemic, but presenting, rather, one of those cases of spontaneous generation that have so recently puzzled the French academicians. I have no doubt but that a judicious quarantine is useful, but if, as we have seen, the pestilence has been developed *de novo* amid the filth and wretchedness of 150,000 fanatics on the borders of the Red Sea, I know of no reason why it may not also be produced among the lazzaroni of Naples, or in the dark, dirty, crowded lanes of London and Edinburgh.

The commission charged with the verification of deaths in

Paris, has recently presented to the prefect of the Seine, a memoir on the mortality of the French capital during the twenty-four years ending with 1863. In the beginning of the eighteenth century, the mortality was 1 in 28; in 1840, 1 in 36; and in 1863, 1 in 40. The causes that have effected this improvement are various, but may be traced directly, or indirectly, to the progress of medical science and practice. Public hygiene is taught as a important department in *l'ecole de medicine*, and hygienic laws are promulgated among the people, while the authorities, to a greater extent than formerly, look after the necessities and comforts of the lower classes. Paris, itself, during the last few years, has undergone a great physical change; many of the old, narrow, crooked streets are replaced by wide, airy boulevards; parks and gardens, to the extent of 1-24th part of the whole city, have been laid out and planted with trees; the sewerage has been largely extended; an abundance of pure water supplied; the Seine, itself, kept free from the filth of the city; the poorer classes more abundantly supplied with good, wholesome food; the density of the population materially diminished, by extending the area of the city; private dwellings have been made subject to public inspection, and the administration of public charities is thorough and efficient, securing to the poorest child of this great city, every day if need be, the benefit of the best medical and surgical talent of Paris. The *Hotel Dieu* is about being rebuilt at a cost of not less than $4,000,000. *La Charite* is also undergoing regeneration and enlargement.

I have been more particularly interested in the wards of GRISOLLE, TROUSEAU, MONERET, and of PIORY at the *Hotel Dieu*, and of BOUCHET, at *l'Hopital des Enfants Malades*, but have seen most of the distinguished physicians and surgeons of the city. VELPEAU is still active, visiting his wards at *La Charite*, and giving clinical instruction every morning. I heard him lecture for an hour to an audience of six persons. His eyesight is still good, and his hand steady, though he operates very slowly. JOBERT (de Lamballe), at the *Hotel Dieu*, scolds and frets, as I presume he always has done, abuses his internes,

and makes himself generally disagreeable. I saw him inject several cases of hydrocele, and one lumbar abscess, with a solution of ammonia. He stated that the inflammation following the injection of ammonia was more plastic than that produced by tr. iodine. I cannot learn that other surgeons here share his opinion. For hydrocele, MAISONEUVE and DESORMEAUX make an application of solid nit. silver, through a canula, to the internal walls of the sac.

MAISONEUVE gave me the statistics of his operations for the cure of varicose veins by injections of per-chloride of iron. He reports 365 operations, 364 cures, and one death. In the fatal case, the tr. iodine was used, by mistake, for the per-chloride of iron. A surgeon of large experience, who has had good opportunities to observe his cases, expresses some doubt as to all the others being *cures*. The operation, if carefully conducted, seems to be safe and is probably as successful as any other.

I have had frequent opportunities of seeing DESORMEAUX use his *endoscope*. He demonstrates the inner walls of the bladder and the mucous membrane of the urethra, throughout its whole extent. I also saw him operate through the instrument for stricture. In chronic inflammations of the prostatic portion, usually so troublesome, the *endoscope* frequently reveals granulations similar to those of granulated eyelids. In such cases, he applies, through the tube, the sulph. of copper in substance.

The Medical Faculty are, as a general rule, opposed to specialties. They say that specialists have never yet established any important principle in pathology or therapeutics, though they may attain great dexterity in certain manipulations. As an illustration of this latter proposition, I may mention the younger DESMARRES. His operations on the eye are certainly wonderful. I have been especially interested in the clinic of FAUVEL, for diseases of the throat and larynx. He is very expert in the use of the laryngoscope, and gave me an opportunity to see some cases of great interest. Among others, a polypus, situated upon one of the vocal chords, and producing

complete aphonia. The removal of the morbid growth was followed by restoration of the voice.

In the Academy of Medicine, at the last meeting, the subject of discussion was thoracentesis, an operation quite frequently performed both in the hospitals and private practice, in this city. M. GUERIN presented a new instrument, intended to prevent the introduction of air into the pleural sac, and also to evacuate, slowly, the contained fluid. At previous meetings of the Academy, the subject of *aphasia* has excited a very general interest. This term has been applied, by TROUSSEAU, to a loss of the power of speech, without lesion of the organs of voice. In one of the wards at the *Hotel Dieu*, I saw a man who could only speak the words "*tout le meme*," on coming in. He was subsequently able to add one or two words, and will now, occasionally, speak a whole sentence, always commencing with the word *tout*. He understands what is said, and seems greatly depressed, sometimes bursting into tears, after fruitless efforts to answer. J.

Proceedings of Societies.

PROCEEDINGS OF F. R. V. ASSOCIATION.

The Fox River Valley Medical Association met in the Common Council Room, in the City of Aurora, on Monday afternoon, Oct. 2d, 1865.

The President, Dr. Tefft, in the chair.

Present Drs. Tefft, Long, LeBarron, Eddy, Cushing, Winchester, Pieronett, Hance, Howell, Hawley, Hard, Winslow, Jenks and Young.

Minutes of last meeting read and approved.

Dr. D. W. Young proposed Drs. Abner Hard, George Oldmixon, and S. R. Millard, as suitable persons to become members of the Association.

On motion of Dr. Winchester, they were ballotted for and elected.

Dr. Hard came in, paid the admission fee, signed the constitution, and became a member of the Association.

Dr. Wm. LeBarron, of Geneva, proposed the following questions for discussion:—

1st. Are there any forms of continued fever, bilious or otherwise, in which there is no alternations of chills with the fever, which can be broken up by quinine? In other words, is the recurrence of chills, not only in the beginning, but also in the course of the fever, essential to make that kind of fever usually considered of miasmatic origin, in which quinine is a specific remedy?

2d. Has quinine intrinsically any febrifuge properties, or does it ever allay or diminish fever except in those cases of intermittent or remittent fever in which it is known to be a

...sical Constitution of Women in America.

By the late JAMES PAUL, M.D., of Trenton, N.J.

[*Concluded from page* 634.]

You will observe that the albuminous or nutrient differs from the saccharine and oleaginous, in containing nitrogen, and sulphur and phosphorus, with carbon, hydrogen, and oxygen, while ...and oxygen—nitro-

motion of Dr. Hawley, of Aurora, these questions were continued for discussion at the next meeting, and Dr. W. LeBarron, of Geneva, appointed to open the discussion by a written address.

Dr. Young, of Aurora, reported a case of diphtheria that he was called to see in consultation, where the disease extended to, and was largely expended upon, the larynx. The formation of membrane had been very rapid, and the expectoration profuse, notwithstanding the patient had been early and energetically treated by a very intelligent and competent practitioner.—The patient died, mostly from suffocation. He desired to know the opinions of the members of the Association, whether the operation of tracheotomy would be of any use in such cases and justifiable.

Dr. Winchester, of Elgin, thought that in such recent and rapid cases the operation would be justifiable, and might be

beneficial, notwithstanding all the cases thus far reported as having been operated on have died. Most of the members thought the operation useless, as experience thus far has taught that all who have been operated on have died.

Dr. Young referred them to several recently reported cases where the operation had been performed, and the patient died. He deemed the operation in this disease useless, and therefore unjustifiable.

On motion of Dr. Eddy, the Association proceeded to the election of officers.

The President appointed Drs. Hawley and LeBarron as tellers.

The following named gentlemen were elected as officers for the ensuing year:—

tout. He understands what is said, and seems greatly depressed, sometimes bursting into tears, after fruitless efforts to answer. J.

Proceedings of Societies.

The retiring President, Dr. Tefft, then read his valedictory address, in which he named every regular physician who has lived and practised in Kane County since its organization as a county.

On motion of Dr. Winchester, a vote of thanks was tendered to Dr. Tefft for the able manner in which he had discharged the duties of his office for the past year.

On motion of Dr. Hawley, a vote of thanks was tendered the retiring President for his able and interesting address, and Drs. Winslow, of Aurora, and LeBarron of Geneva, were appointed a special committee to assist Dr. Tefft in securing the further history of the regular physicians of the county, and in securing the publication of the same in the county papers.

On motion of Dr. Young, the Junction, in DuPage County, was selected as the next place of meeting.

Dr. Winchester, of Elgin, suggested that the January meet-

ing coming during the holidays, we, as an Association, ought to get up some social entertainment in the evening.

On motion of Dr. Eddy, the Association adjourned to meet at the Junction, on the second Monday afternoon in January, 1866, at 1 o'clock.

DR. D. W. YOUNG, Pres't.

DR. E. WINCHESTER, Sec'y.

Selections.

THE FOOD AND THE TEETH.—OBSERVATIONS ON THE INORGANIC CONSTITUENTS OF THE FOOD OF CHILDREN, AS CONNECTED WITH THE DECAY OF THE TEETH, AND THE PHYSICAL CONSTITUTION OF WOMEN IN AMERICA.

BY the late JAMES PAUL, M.D., of Trenton, N.J.

[*Concluded from page* 634.]

You will observe that the albuminous or nutrient differs from the saccharine and oleaginous, in containing nitrogen, and sulphur and phosphorus, with carbon, hydrogen, and oxygen, while the latter contains only carbon, hydrogen, and oxygen—nitrogen being required in those compounds which give strength and formation to the frame.

Now, the albuminous, or nutritive, being that portion which affords nourishment to the body, contains those constituents required in the first place for the formation and giving strength to the different portions of the body, and, when fully developed, of repairing the general waste continually going on in the system, whether from the usual wear and tear, fractured bones, or the ravages of disease. And the saccharine and oleaginous—the calorifacient or heat making—to keep up a continual supply of fuel, as it were, that the body may be kept of a regular and proper temperature; for you are, no doubt, aware that there is a continued supply of carbon, or, in more simple language, of charcoal, required to keep up the natural temperature of the body; and what is not required for immediate use is stored away in the form of fat, to be called into action as occasion requires.

We have seen in the analysis of milk, that the fluid contains

butter, cheese, and sugar; consequently, we can understand how an infant can thrive so well upon it—the cheese or caseine* of the milk containing the nitrogenized or nutrient principle, which, together with the earths and salts contained in the milk, goes to form the bones, muscles, and the different tissues of the body—the sugar, which we have seen by the analysis, contains a large quantity of carbon in its composition, going to keep up the temperature of the infant, while the butter, in the nature of fat, is stored away in a healthy infant, filling up every vacant interstice, causing a roundness and plumpness, the pride and joy of the happy parent.

Now let us mark the difference of the babe that has been denied a milk diet, and is doomed, by ignorance, to be fed on starch and sugar. You will recollect that these two substances were composed of carbon, hydrogen, and oxygen only. By a process of digestion which I need not here enter into, such food is converted into sugar, the carbon of which becomes the fuel by which the temperature of the body is kept up—there being no principle in the food to give albumen, there is nothing taken into the stomach upon which the gastric fluid can expend its solvent powers; the infant is, therefore, much troubled with acid eructations, and the stomach becomes weak and irritable. The want of the nutritive constituent of the food, and the earths and salts, etc., necessary and essential for the formation of the bones and teeth, show a lamentable deficiency in the child's development, and there being no fatty matter to be laid up, the body is emaciated, the countenance is ghastly, the flesh and integuments hang soft and flabby over the bones, no absolute disease can be detected, the child is ravenous and hungry, and the unfortunate babe descends to the tomb, a spectre and an object of the most pitiful description. This is no fancy sketch, but one too often met with in the ordinary walks of professional life. And why is it so? Simply because the composition of the human frame, the component parts of our food requisite to produce that frame, and the process of digestion and nutrition are so little understood.

We now advance from infancy to childhood—and this is a

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	Analysis of Caseine from fresh milk.	Albuminous substances found in whey, after coagulation with an acid.
Carbon	54.825	54.96
Hydrogen	7.153	7.15
Nitrogen	15.628	15.89
Oxygen }	22.394	21.73
Sulphur }		0.36

period when the greatest attention is required in supplying nutriment to aid nature in the great work of developing the body. The child is now deprived of the maternal secretion, and dependent on food prepared for its use by the hand of man—perhaps living in a city, and deprived of pure wholesome milk from the cow. And we know there is a vast disproportion in the quality of milk when the cow is country-fed on the natural productions of the farm, and when city-fed on slops and grain, the refuse of the brewery.

It is at this age that the great proportion of bony substance is deposited; those of the extremities are lengthened, become more compact and stronger, and the substance of the teeth is deposited in the cells of gelatinous tissue. How necessary is it, then, that this subject should receive the utmost attention of parents. It has hitherto been too much the custom to leave all this, as belonging entirely to nature—as a thing we had nothing to do with. We have been too much in the habit of considering that nature furnished her own materials, and man had nothing to do with her operation. The potter cannot fashion the bowl without the clay, neither can bone be formed without earth. No, my friends, nature must be supplied with the material, which, although offered in the most incongruous forms, she has the power of decomposing, selecting from, and supplying for the various purposes required; one portion, as we have already stated, to act as fuel in keeping up the temperature; another portion she selects to add to the flesh, the muscle, skin, and different tissues; and the earths which are held in solution, she carries away by vessels adapted for that purpose, and deposits them, atom by atom, until they are so compressed, so strongly compacted together, as to become what we call *solid bone;* and all this so wonderfully wrought, that, as we have seen, small tubes are left in the hard, stony formations both of the bones and of the teeth, that nourishment may be supplied them, holding in solution the material of which they are composed, that natural waste and decay may be replaced, and injuries repaired.

It is to this nutrition, and of the earthy matter of which the bones and teeth are composed, a deficiency which is attended with results so deplorable, that I particularly wish to call your attention.

To what can we attribute the calamity which too often befalls the young? I allude to distorted spines, where the bones composing the spine, instead of forming a column, allowing the body to be erect and dignified, are zigzag in their course, causing one shoulder to bulge out, and the opposite side to bend or

double upon itself. This deformity has been long understood to arise from a deficiency of *lime* in the composition of the bones of the vertebræ, allowing them to fall, press upon, and injure each other, destroying the beauty of the fabric, and the health and comfort of the individual.

Now let us take a glance at the inhabitants of two countries, natives of which are no strangers on this continent. I take them as examples, because the food of the *common people* of those countries, is well known to be of the most common kind. I allude to the natives of Scotland and Ireland—the principal food of one being *oatmeal*, and of the other, potatoes. We have heard a great deal of the famishing poor of those countries, and particularly of the latter—of the misery and wretchedness seen in every hovel; and there cannot be a doubt that a famine walked through the land, when the blight and rot despoiled them of their potato crop, on which, for so long a period, they depended as the great article of food. Now, allowing all this—allowing in the *best seasons*, the chief article of subsistence has been potatoes for breakfast, dinner, and supper; glad indeed many of them to get a little animal food once a week to dinner or even far more seldom—I now ask, what number, in the thousands of emigrants from that country who yearly arrive at our ports, are there that show a constitution weak, fragile, and wanting in physical strength? Many, no doubt, arrive, worn down by disease and suffering, and in the last stage of debility; but let them recover from that state, and the robust frame and healthy constitution will be again developed; and the bones are strong, the teeth undecayed, and the muscular energy only wanting opportunity to display itself;—in fact, when we wish to denote strength in women, we use the familiar phrase, "strong as an Irish women;" and all this from being reared on *potatoes*. But then if we examine the analysis of the potatoes, we shall find contained in 100 parts of dry potatoes,—

Carbon	41.1
Hydrogen	5.8
Nitrogen, Oxygen,	45.1
Ashes	5.0

Here we see that potatoes not only contain the nutrient but the earthy constituents.*

* According to a memorial presented to the French minister, on the proportions of nutriment of the means of living, by Dr. Glaser, we find potatoes taking no mean rank.

But we have a stronger and more healthy race yet, from Scotland and the north of Ireland, who are generally descendants of the Scotch, and continue, in a great measure, the same means in rearing the young. Now, *a* principal, I will not say *the* principal food of the youth of Scotland, high and low, rich and poor, except in the larger cities, amongst those who class themselves as more refined and more civilized, but who number few in proportion, consists, for breakfast, at least, of oatmeal—that is, porridge and milk; and milk, potatoes, and wheaten, oaten, and peas bread, or *bannocks*, at other times of the day. Animal food amongst the poor is a rarity; a meat dinner on Sunday *only*, being common. Even, among the youth of the better class, butcher's meat, or animal food, is by no means a principal article of subsistence. And I would particularly remark that *Scotch oatmeal* (the oatmeal generally used throughout Scotland) is coarse, and contains much of the bran which invests the oat—containing as it does, a large proportion of the earthy constituents required for the production of bone. Analysis of 100 parts of dried oats gives:—

Carbon	50.7
Hydrogen	6.4
Oxygen	36.7
Nitrogen	2.2
Ashes	4.6

I may here casually remark, that the advantage to be derived from this wholesome food has not escaped the observation of her majesty, Queen Victoria, who appears in the multiplicity of her public duties, not to lose sight of the equally sacred duties of a mother—and we hear of her son, the heir to the crown of Great Britain, being as fond of his oatmeal porridge as the meanest peasant child in Scotland.

I rather doubt, if parents generally have given to this subject the attention to which it is entitled. I trust, however, that those who have followed me thus far, may be impressed with its importance. We cannot shut our eyes to the complaint which so

NUTRITIVE ELEMENTS.

100 lbs.	Wheat Bread	contains	30 lbs.	
"	Flesh	"	21 lbs.	
"	Fresh beans	"	80 lbs.	casein and starch.
"	Peas	"	83 lbs.	
"	Lentils	"	94 lbs.	
"	Potatoes	"	25 lbs.	albumen, starch, and sugar.
"	Carrots	"	14 lbs.	albumen with sugar.
"	Beets	"	8 lbs.	

generally prevails, of decayed teeth—and a moment's reflection will call to mind the number of the young and beautiful who are prematurely hurried to the tomb, ere yet the bud has expanded into the full developed flower. Nay, comparing the two countries, the statistics of life and death communicate to us also the important fact, that while the greatest mortality shows itself in England in infancy and childhood, on this side the Atlantic, it is found at a more mature age.

Neither has the tendency of the physical organization of women on this continent to degenerate, escaped the observation of one of our greatest medical philosophers in this country.* who regards this retrogression as a national calamity, and impresses upon his students the importance of the subject, and the propriety of their attention in attempting to arrest it; and he particularly specifies the great object to be gained in the use of bran-bread, made from unbolted flour. On this head, I shall have more to say hereafter.

With these observations, let us now direct our attention to what can be offered in remedy of this evil.

We have already stated, that in no country in the world are children more beautiful or more lovely—healthy in complexion, quick, smart, and intelligent—active, sprightly, and playful in their disposition. Now, in the period from infancy until the child becomes mature—let us, at all events, say until thirteen or fourteen years, and even to a more advanced age—there is a continued growth—a continual deposition of organic and inorganic or earthy particles, which are required for the formation of the bone, teeth, flesh, and every part of the human body. I have shown you that the essential ingredients for these several formations are all found in the milk of the mother; consequently, as long as the infant is deriving nourishment from the mother, she ought to partake of good, wholesome, nourishing food—that the blood, deriving these principles from the food, may be able to supply them in turn to the milk from which it is secreted. So long then, as the child is thus nourished, so long is it safe, and the rudiments or foundation of a robust frame is laid. And if we are to expect, in future life, the stalwart frame of man, or the enduring, firmly-knit, compact, and healthy physical constitution in woman, the organic and inorganic or earthy compounds of which that frame is composed must not be denied—Nature must be supplied, or Nature will fail.

It is not for me to dictate to any parent what shall be the food of his child—it is enough that I point out for his informa-

* Dr. Jackson, of Philadelphia.

tion, what may be required to give, what in common language is called "bone and sinew," to their offspring. It is necessary then that the food of children should contain:—

1st. Aliment, having the *calorifacient* or heat-sustaining principle. And this is contained in quite sufficient quantity in the usual food—in milk, wheaten bread, potatoes, arrow-root, Indian corn, (as mush hominy, or corn-bread,) in most vegetable matter, and in sugar.

2d. Aliment containing the *nutrient* principle. And this is contained in animal food—the lean of beast, bird, and fish—in milk, eggs, wheat, rye, potatoes, beans, etc., etc.

And, 3d. Aliment containing the inorganic or earthy constituents—in which depends strength of frame, and from which are formed the bones and teeth of the individual. And these are contained in milk, eggs, animal food, and particularly in wheat, rye, oats, potatoes, etc.*

Of the inorganic constituents contained in wheat, (and the same may be said of the other *cereal* grains,) I have alluded to the benefit to be derived from using bread made of unbolted flour. On this subject, allow me to refer to the difference of flour having much of the bran remaining, and superfine flour, or that in general use throughout this country, and on which Prof. Johnston has made the following curious but practical observations. Examining wheat and flour, as to the amount of

* On this subject, I extract the following from Carpenter's Physiology, page 488:—"These substances are contained, more or less abundantly, in most articles generally used as food; and where they are deficient, the animal suffers in consequence, if they are not supplied in any other way. Thus, common *salt* exists, in no inconsiderable quantity, in the flesh and fluids of animals, in milk, and in eggs; it is not so abundant, however, in plants; and the deficiency is usually supplied to herbivorous animals by some other means. *Phosphorus* exists also in the yolk and white of the egg, and in milk—and it abounds, not only in many animal substances used as food, but also (in the state of phosphate of lime or bone earth) in the seeds of many plants, especially the *grasses*. In smaller quantities, it is found in the ashes of almost every plant. *Sulphur* is derived alike from vegetable and animal substances. It exists in flesh, eggs, and milk; also in the azotized compounds of plants; and (in the form of sulphate of lime) in most of the river and spring water that we drink. *Iron* is found in the yolk of egg, and in milk, as well as in animal flesh; it also exists is small quantities in most vegetable substances used as food by man—such as potatoes, cabbage, peas, cucumbers, mustard, etc. *Lime* is one of the most universally diffused of all mineral bodies; for there are few animal of vegetable substances in which it does not exist. It is most commonly taken in, among the higher animals, combined with phosphoric acid; in this state it exists largely in the seeds of most grasses, and especially in wheat flour. If it were not for their deficiency of *lime*, some of the leguminous seeds (peas) would be more nutritious than wheaten flour; the proportion of azotized matter they contain being greater. A considerable quantity of lime exists, in the state of carbonate and sulphate, in all hard water."

the nutrient or muscular matter, the fat-forming principle, and the bone and saline material, contained in grain in different States, he found that

	Muscular Fat.	Fat Prin.	Bone & Sal.
In 1000 lbs. of whole grain	156 lbs.	25 lbs.	170 lbs.
" fine flour	130 lbs.	20 lbs.	60 lbs.
" bran	------	60 lbs.	700 lbs.

Taking the three substances together, according to Professor Johnston, of 1000 lbs., the three substances contain, of the ingredients mentioned,—

	Whole Grain.	Fine Flour.
Of muscular matter	156 lbs.	130 lbs.
Of bone material	170 lbs.	60 lbs.
Of fat	28 lbs.	20 lbs.
	354 lbs.	210 lbs.

Accordingly, the whole grain is one-half more nutritious than fine flour.* It also shows the very great proportion of *bone material*,—that is, *earthy constituents*,—contained in the bran: no less than 700, out of 1000 parts, or a *little more than two-thirds* of the whole. Now, by reference to the same work, we find, in a communication from a Mr. Bentz, the difference in weight of a barrel of flour, without the bran, and when only the outer coating of the wheat is taken off. He says, "The weight of the bran or outer coating would, therefore, in the common superfine flour, constitute the *offal*, weighing only 5¼ lbs. to the barrel of flour, whilst the ordinary weight of offal is from 65 to 70 lbs. to each barrel of flour; showing a gain of from 59¾ to 65 lbs. of wheat in every barrel of flour." Now, if we estimate the earthy constituents to be two-thirds of the offal or bran, we must consider that there is an actual loss of these important constitutents, which might be reserved, in every barrel of flour, of 40 lbs.

Again, if we estimate, (according to the average of the consumption of flour to the amount of population, as one barrel to each individual,) that every child shall consume annually only half a barrel of flour, then we find, that by the use of the superfine flour, as commonly used in families, the child is deprived yearly of 20 lbs. of those earthy substances which are required to form the bones and the teeth. When we speak of a child consuming half a barrel of flour annually, it appears a large quantity; but when we reduce the same to a daily allowance,

* Patent Office Report, 1847, p. 116.

we find that it is little more than 4 oz. or 4⅓ oz.; and every parent must know that this would be a very small amount to limit children. Yet we see how large a quantity of the bony material would be added, if unbolted flour was used instead of the present superfine flour. I may here add, that the oatmeal used in Scotland, already referred to, contains the bran or inorganic constituents, while the oatmeal used in England is deprived of it. Now this is a great loss of the most valuable conconstituents in only one of the principal articles of the food of children; and if we allude to another article, which is largely used on this continent,—I mean Indian corn,—(and I may also add the fat of meat, both of which, children, if allowed, will partake of very freely,) we shall find that both of these abound more in the calorifacient, or heat-sustaining principle, and for the deposition of fat, than the nutrient; and that they are quite deficient of the earthy material, *of lime*—that material on which so mnch depends the proper structure of the teeth. Analysis of Indian corn shows the following composition—as taken from Mr. Salisbury's prize essay—read at the New York Agricultural Society, for 1849:—

Whole kernel.

Starch	50.64
Sugar and Extractive	7.46
Sugar	1.50
Fibre	6.28
Matter separated from Fibre	0.05
Albumen	8.64
Caseine	1.70
Gluten	4.56
Oil	4.00
Dextrine or Gum	4.84
Water	10.22
	99.89

Ash of the kernel constituting about two per cent.

Carbonic acid	a trace.
Silicic "	1.450
Sulphuric "	0.206
Phosphoric acid	50.955
Phosphate of Iron	4.355
Lime	0.150
Magnesia	16.530
Potash	8.286
Soda	10.908

Chloride of Soda	0.249
Organic acid	3.400
	97.000

This is a most elaborate analysis—far more minute than any analysis we have had of any of the articles of food—in fact, more minute than satisfactory; for the analysis of the whole kernel does not exhibit any amount of inorganic constituent; and when the whole was converted into ashes, we find that the *lime* only amounts to *the one-sixth of one part* in a hundred. Now, on inquiry, I find, on the authority of a very intelligent miller of this city, that in grinding corn, the bran, or thin skin of the grain, is detained in forming it into corn-meal; consequently, is deprived of even that portion more particularly containing the earthy constituents. This gentleman in conversation mentioned an important fact, relative to this deficiency of lime in corn. To the best of my recollection, he observed, "This stands to reason; for, ten years ago, all the lower part of Jersey grew excellent corn, but would not grow wheat; but since the introduction of *lime* as a manure, they have raised considerable wheat crops." Now the fact is, it is not the habit or food of this plant, even had *lime* been in the earth; and magnesia and the saline manures are recommended to the agriculturist as best suited for its proper development.

It is generally looked upon as invidious, and one is more likely to incur odium, than to receive credit for saying one word against a food which stands so high in public estimation, and is so universally used over this continent. Yet it must not, for one moment, be supposed that I condemn the use of Indian corn, in its various forms as mush, hominy, bread or pudding, as an article of diet: far from it. But containing, as it does, a large proportion of starch and fatty matter, rather a small proportion of the nutrient principle, and quite a deficiency of the inorganic or earthy constituents, I consider it as valuable, as a light diet, for heat-sustaining purposes only, and therefore a desirable adjunct *to other food*, containing more nutriment and a due proportion of the earthy constituents.

As an example or illustration of the want of the nutrient principle in corn or corn-meal, I may here allude to the effects I have seen in the West Indies; where, in a dearth of the ordinary provisions on which prisoners were fed, corn-meal was substituted; corn-meal and salted herrings, fish, etc., constituting their food. Now the effect was, that all the prisoners lost their natural strength; at the same time they became fat

and bloated, inclining to dropsey; and this was not the effect of incarceration; for the prisoners were engaged in road-making, trimming fences, etc.; consequently, in a healthy and exhilarating employment.

In reference to our domesticated animals, it may be asked, Why is corn so useful, as an article of food, to animals generally—horses, hogs, sheep, etc.? I have already shown that the overplus of the calorifacient food, after what may be required for sustaining the temperature, it stowed away in the form of fat. Now, if we instance the horse: corn is generally, if not always, given as an adjunct to his more usual food, hay. And we find by analysis, that grass or hay contains not only the nutrient principle, but the inorganic constituents required in the formation of bone, etc.

One hundred parts of dry hay contain—

Carbon	45.8
Hydrogen	5.0
Oxygen	38.7
Nitrogen,*	1.5
Ashes,†	9.0
	100.

Thus, the hay gives to the animal strength in bone and muscle, while the corn supplies additional heat-sustaining properties, and lays by, in the form of fat, the overplus as a reserve. The harder the horse is worked, the more corn he can bear; the great proportion of the carbon being carried off by the lungs, and the hydrogen and oxygen, as water, in exhalation and perspiration. But if the same quantity is given to a horse at rest, it overloads him with fat, which, in his case, accumulates more internally, or around the internal organs, and will, in course of time, induce disease; while in the pig, under similar circumstances, the fat is laid on externally, if I may so speak, giving the rich fat pork of our markets. And here I would again remark, that no farmer would consider it necessary or essential to give corn to a young colt or horse, until required to work; nay, so careful is nature, in appropriating just so much and no more of any constituent that may be required, that the food of the young horse should be more nutritious than heat-sustaining; and that there shall be no superfluity to store away fat, we find by analysis, that the milk of the mare has little or no butter,

* Fifteen pounds of such hay, containing oz. 3.095 of nitrogen.
† These ashes having a good proportion of lime.

in fact only traces of it, in its composition.‡ What a lesson in the animal economy is here given, and what a practical illustration of the requirements of the young of that and other animals!

Again, it may be contended, that among the beautiful children we see on every hand, there is no want of those who are fat and hearty. It is not *fat* we want—it is bone and muscle—with so much fat only as shall give firmness to the flesh and plumpness to the figure. Fat, although it enters intimately into union with the other component parts of bone and muscle, cannot be transformed either into the inorganic constituents of bone or teeth, or into muscular fibre; these must be contained in the food consumed, in the first place, and thence transferred to the blood.

How necessary, then—how important is—if we expect to give strength and vigor to the constitution, that the food, in the first years of infancy and childhood, when the formative process is going on, should receive some further attention than has hitherto been given to it; and if our youth—if our young females have hitherto been deprived of the necessary constituents for the full development of every portion of the body—can we wonder that a woman should be the delicate and fragile being she is, or that by the decay which assails the teeth in early life, she should be deprived of an ornament of so much value? If this state of things can be altered—if the physical constitution of woman in America can be saved from further degeneracy—a purpose may be effected, of consequence even in a national point of view; for it is to the healthy and vigorous constitution of woman that we must look for a race of hardy, vigorous, and enterprising freemen.

In conclusion I would briefly state, that this is a matter in which professional aid can avail little; it lies at the door, and must be the work of parents generally. It is for them to understand the great value to be attached to the food on which their children subsist—that it shall be wholesome and nutritious, and abounding in earthy compounds so absolutely necessary to their proper development. If the chief articles of food have hitherto consisted of compounds made of superfine flour, corn-meal, and the fat of meat, let there be substituted in their stead, bran-

‡ ANALYSIS OF MARE'S MILK.

Water	896.3
Butter	Traces.
Caseine	16.2
Sugar of Milk, Extractive Matters, and Fixed Salts	87.5
	1000.

bread, milk, eggs, the lean of meat, and potatoes; let more attention be given to the nutrient quality of the food;—let there be no deficiency of those articles containing the earthy material, that the bones and teeth shall not be deficient in those constituents so necessary in their composition and structure; and I should be inclined to hope that the evils which now exist will be lessened, and the physical organization of succeeding generations be equal to that of my nation upon earth.

REPORT ON THE USE OF PRESSURE IN THE TREATMENT OF GONORRHŒAL AND PURULENT OPHTHALMIA.

By Surgeon JOS. S. HILDRETH, U.S.V.,
In charge of Desmarres (U.S. Army) Eye and Ear Hospital, Chicago.

Read before the American Ophthalmological Society, June 13th, 1865.

Tabular Statement *of all Cases of Gonorrhœal and Purulent Ophthalmia treated in the Desmarres Eye and Ear Hospital, at Chicago, from Aug.* 26, 1864, *to January* 15, 1865, *with results obtained.*

No.	Names.	Age.	Affection.	Treatment by Pressure. With. Right.	With. Left.	Without. Right.	Without. Left.	Results. Saved. Right.	Saved. Left.	Lost. Right.	Lost. Left.
1	Chapin	23	Purulent Ophthalmia...	1	1	...	...	1	1	...	...
2	Case,	48	" "	1	1	...	...	1	1	...	...
3	Richards	33	" "	1	1	...	...	1	1	...	...
4	Haight	26	" "	...	1	1	...	...	1	1	...
5	Vosburgh	43	" "	1	...	...	1	1	...	...	1
6	Finn	23	" "	1	..	...	1	1	...	...	1
7	Shimming	20	" "	1	...	...	1	1	...	...	1
8	Ulrich	25	" "	1	...	...	1	1	...	...	1
9	Strong	24	" "	...	...	1	1	1	1	...	...
10	Shafer	39	" "	...	...	1	1	...	1	1	...
11	Smith	25	" "	...	...	1	1	1	1	...	...
12	Doran	17	" "	...	...	1	1	...	...	1	1
13	Gibbs	43	" "	...	...	1	1	...	...	1	1
14	Ellsworth	24	Gonorrhœal Ophthalmia	1	1	...	...	1	...	...	1
15	Essen	46	" "	1	1	...	...	1	1	...	...
16	Mervin	20	" "	...	...	1	1	1	1	...	...

Recapitulation.

	No.	Saved.	Lost.
Eyes Treated with Pressure	15	14	1
Eyes Treated without Pressure	17	7	10

The condition of the above cases at the commencement of treatment with pressure was as follows. Results are also given.

CONDITION OF PATIENTS.

No. 1.—Corneæ panniform and ulcerated; chemosis sero-phlegmonous and large; purulent discharge abundant.

Nos. 2 and 3.—Corneal epithelium of both eyes considerably disturbed; chemosis sero-phlegmonous, firm and large; discharge abundant.

RESULTS, &C.

Pressure was used on both eyes in these three cases.

No. 1 recovered in good condition, except nebulous spots at seat of old ulcerations of corneæ, whose panniform condition is fast disappearing and vision improving.

Nos. 2 and 3 recovered in good condition.

CONDITION OF PATIENTS.

No. 4.—Right cornea sloughed and lost; left corneal epithelium so disturbed as to seriously interfere with its transparency; chemosis large and phlegmonous.

No. 5.—Cornea of left eye sloughed and lost; right corneal epithelium considerably disturbed; chemosis phlegmonous, large and firm.

No. 6.—In similar condition.

No. 7.—Left cornea sloughed and lost; right affected with central ulceration and perforation; chemosis phlegmonous and very large; great tumefaction of the lids of both eyes.

No. 8.—Left cornea sloughed and lost; right panniform and ulcerated; chemosis very large, firm and phlegmonous; purulent discharge from all abundant.

RESULTS, &C.

Pressure was employed on left eye of No. 4 and on right eye of Nos. 5, 6, 7, and 8.

Nos. 4, 5, and 6 recovered in good condition; No. 7 with central leucomatous spot, artificial pupil practicable; and No. 8 with cornea cloudy and panniform, but constantly improving.

CONDITION OF PATIENTS.

Nos. 9, 10, and 11.—Severe purulent opthalmia, with large sero-phlegmonous chemosis, (No. 10 being phlegmonous;) purulent discharge abundant, and great tumefaction of lids.

RESULTS, &C.

No pressure was used in these cases.

No. 9 recovered both eyes in good condition. No. 10 lost left eye from sloughing of cornea, the right cornea recovering, panniform and nebulous, but improving. No. 11 recovered

with synechia anterior of each eye, from perforation of the corneæ.

CONDITION OF PATIENTS.

Nos. 12 and 13.—Severe purulent opthalmia, accompanied by considerable disturbance of corneal epithelium of both eyes and large sero-phlegmonous chemosis; purulent discharge very abundant; lids greatly tumefied.

RESULTS, &C.

No pressure used, and both eyes lost in each case from sloughing of the corneæ.

CONDITION OF PATIENT.

No. 14.—Cornea of left eye largely infiltrated in its deep "laminæ;" very large and firm chemosis; lids largely tumefied and eye scarcely influenced by recti-muscles; discharge of gonorrhœal pus from both eyes very profuse. Cornea of right eye slightly infiltrated in superficial "laminæ;" chemosis large, phlegmonous and firm; lids much swollen; patient had discharge from the urethra.

RESULTS, &C.

Pressure employed on both eyes. Cornea left eye recovered, opaque from ulceration and perforation; cornea of right eye slightly cloudy, but vision continually improving.

CONDITION OF PATIENT.

No. 15,—Epithelium of both corneæ considerably disturbed; chemosis large, firm and phlegmonous, great tumefaction of lids, and abundant gonorrhœal discharge.

RESULTS, &C.

Pressure applied to both eyes, which recovered in good condition.

CONDITION OF PATIENT.

No. 16.—Corneal epithelium slightly disturbed; large phlegmonous chemosis; great tumefaction of lids, and abundant gonorrhœal discharge from both eyes.

RESULTS, &C.

No pressure used. Recovered in good condition.

From the preceding table and subsequent remarks, it appears that thirteen patients with purulent ophthalmia were treated. In three cases both eyes with pressure, and both eyes in each case recovered.

In five cases an eye only of each patient was treated with

pressure, and the other eye without. All the former were saved, and all the latter lost.

In five cases not treated with pressure, one patient recovered both eyes in good condition; one with synechia anterior of each eye; one losing the right and saving the left eye, and two losing both eyes.

Three patients affected with gonorrhœal opthalmia were also treated.

In two cases both eyes were treated with pressure. One patient recovered both eyes, and one lost the left and saved the right eye.

In one case in which no pressure was used both eyes were saved.

The above comprises all cases of these types treated in the hospital from August 26th, 1864, to January 15th, 1865, which I have been particular to describe in order to show the nature of these affections as they manifested themselves, and the relative value of the application of pressure in their treatment.

Those of purulent ophthalmia exhibited an unusual degree of malignity; especially in tendency to destruction of the cornea by infiltration or ulceration, and sloughing "couche sur couche."

Some oculists have suggested, what occurred to me at the time, that many of them were diphtheritic, but I am not satisfied such was the case. At all events, the indications of such disease were as well marked in those treated with pressure as in the others. The cases of gonorrhœal ophthalmia presented nothing unusual beyond what has been described above.

I have been careful and explicit in regard to details, on account of the marked difference in the results obtained with and without pressure in the treatment, which, in all other respects, was the same; and the more so, as in five cases circumstances placed it in my power to witness the difference of treatment on the same individuals.

This became possible from the fact of my entire want of knowledge of the use of pressure in such cases, until circumstances forced me to devise some method of staying the ravages of disease over which I could obtain, by all known means, but little control; and it was not until ten eyes out of twenty-four had been lost, that the idea suggested itself to me, which, like many others, was at once carefully and prudently acted upon.

Twelve hours seemed to justify the means adopted, and after twenty-four hours the change in the left eye of case No. 4, the only one at first attempted, was so decisive as to warrant the experiment on a more extended scale.

The results are given in the table.

What I mean by the use of pressure in the treatment of such cases, is not the application of lint, wet or dry, over the lids with moderate compression, but a *firm, hard, continued pressure upon all parts of the contents of the orbit, especially the anterior.* This I effect in the following manner:—

The lids being closed, the orbit is to be packed, as it were, by means of charpie, or picked lint, (scraped lint or cotton wool is not so serviceable,) in such a manner that all parts about the eye, within the orbit, the anterior hemisphere of the globe, and especially the conjunctiva, shall be acted on.

Care must be taken to fill the grand angle, and to have the charpie evenly and regularly disposed *about* as well as over the globe.

Quite a large bunch should be used for each eye, not only to ensure evenness of pressure, but to absorb the purulent discharge. This being done, compression is made by means of a bandage, or better, a firm elastic band of rubber braid, not less than two inches in width, passing around the head. It should be slowly and regularly increased until the pain, if any there be, in the parts affected, is greatly diminished or controlled, if practicable.

In other words, pressure is to be applied to the eye and surrounding parts within the margin of the orbit to a decree sufficient to so control the circulation as to prevent the destructive tendency of the disease, but not to interfere with proper nutrition. This must, of course, vary with the peculiarities of each case.

But the principle of employing, as constantly as possible, firm, hard, even and continued pressure from the *earliest moment practicable* until the *close of all acute symptoms*, is not to be lost sight of for a moment. The anatomy of the orbit, the mechanism of the lids, and the cushion of adipose tissue posterior to the globe, render this not only possible, but easy.

I have in no instance resorted to it in purulent or gonorrhœal affections of the eye during the acute stages, even after the organ has been irretrievably lost, without greatly diminishing the discharge in a short time, and very materially adding to the patient's comfort in reducing the pain, and modifying subsequent and present staphyloma, as occurred in cases numbered 4, 5, 6, 7, 8, and 12.

While the purulent discharge is abundant, the dressing should be renewed twice during every twenty-four hours. Dry charpie is to be preferred, though moist will answer; yet it is not so elastic.

That pressure will have a potent influence in diminishing the discharge, reducing the tumefaction of the lids and the chemosis, modifying extravasation and exudation, arresting and inducing infiltration of the cornea to become resolved, is now a clinical fact.

The rationale of such action is certainly as simple as the means employed to produce it.

The influence of the virus (be it what it may) induces an extraordinary flow of blood to the affected parts, and often with great rapidity.

Their arterial circulation is taxed to the utmost, and the venous also; while the capillary connecting them is inadequate to the demand imposed upon it, even when distended to its utmost.

Hence the results which unhappily too frequently follow. Compression of the affected parts diminishes the flow of blood into them, so acts upon the capillaries as to prevent their enlargement, stimulating them to perform their functions, besides producing partial anæsthesia, and controlling or modifying the pain.

Having dwelt sufficiently, I think, upon the uses of pressure in these cases, I now propose to allude to the treatment I have found in other respects most beneficial. Before doing so, a division of cases will be desirable, to illustrate my reasons for adopting certain means.

1st. Those cases in which pain, swelling, heat, redness, and phlegmonous or phlegmono-serous chemosis are decided and well-marked, and which, usually occuring in patients of full habit, or having that condition favorable to the formation of the so-called "plastic lymph," may be called Sthenic.

2d. Those characterized by "serous puffiness" of the lids, serous or sero-phlegmonous, chemosis, little pain, discharge thin, and great tendency to infiltration on the part of the cornea—conditions which usually occur with persons whose systems have been reduced by scurvey, typhoidal disease, chronic diarrhœa, &c.—and which may be termed Asthenic.

Before proceding to detail the medical, I must allude to certain surgical means, frequently found necessary. It often occurs that the cornea becomes anæsthetized, so much so that the patient feels very imperceptibly the contact of a foreign body—as the point of a small roll of twisted paper, or a small camel's hair brush—and the pupil cannot be influenced by atropia, or only partially so, though *no* adhesions exist between the iris and the capsule.

I have found infiltration of the cornea to follow very closely upon such complications. Deep scarifications, circular or radiated, of the chemosis, or cups to the temple, have, in my hands, been very unsatisfactory in removing or preventing such conditions. No better results seem to follow paracentesis of the anterior chamber, "repeated" or otherwise. Unless largely infiltrated, I have frequently succeeded in saving the cornea in such cases by means of Hancock's operation of division of the "ciliary ring." Besides its preventing infiltration and sloughing of that important membrane, the patient will suffer much less pain during the continuance of acute symptoms. Unless the cornea is in an anæsthetized condition, is beginning to be infiltrated, or shows symptoms of sloughing and ulcerating, such an operation should not be resorted to.

I have frequently found the indications for this operation, as mentioned above, to exist with other affections of the eye, and have relieved them in the same manner; but the subject would, of itself, form an extensive article, and I shall therefore not dwell longer upon it here, beyond remarking that Hancock's operation in relieving such symptoms and conditions, cannot be relied upon to take the place of pressure; neither will the latter, under similar circumstances, relieve the necessity of dividing the "ciliary ring."

The utility of scarifications, deep, circular or radiated, of the chemosis is too well known to be dwelt upon here.

For local application I rely mainly upon bromide of ammonium, atropia, and nitrate of silver. In sthenic cases I prefer the use of bromide of ammonium dissolved in glycerine—forty to sixty grains to an ounce of pure glycerine—which is applied twice daily to the conjunctiva, ocular and palpebral, by means of a camel's hair brush.* It may be employed oftener in some cases, but this will be found, as a general rule, sufficient. Under its influence purulent, and especially gonorrhœal ophthalmia, appears to become rapidly modified, as I have frequently had occasion to demonstrate. The addition of ten grains of tannin to one ounce of the solution adds somewhat to its efficacy, but this is not indispensible.

For asthenic cases the nitrate of silver is most serviceable. I prefer to apply it gently to the mucous membrane of the lids,

* The following will be found serviceable for gonorrhœa:—

Bromide of ammonium,	dr. ss.—dr. j.
Tannin,	dr. ij
Aqua,	oz. ij.—Misce.

Sig.—One half ounce to be injected *pro re nata.*

neutralizing any excess of the salt by proper means. Blood may or not be taken from the lids, the chemosis or the temple, after the use of bromide of ammonium or nitrate of silver; but this must depend on the size of the chemosis and state of the patient. Atropia will be required to dilitate and so maintain the pupils.

For general treatment in sthenic cases I prefer muriate of ammonia in alterative doses, from three to five grains every one or two hours. Asthenic cases are benefitted by muriated tincture of iron, five drops every two hours or oftener, if the patient will bear it. Permanganate of potassa is also useful, in ¼ grain doses, every two or three hours. But it is evident that all general means must be adapted to the existing condition of the patient. The treatment for purulent and gonorrhœal ophthalmia may, therefore, be summed up as follows:—

1st. If anæsthesia of the cornea exists, or it is infiltrating, and especially if the pupil will not yield to the influence of atropia, Hancock's operation of division of the "ciliary ring" is indicated, care being taken to divide all its fibres from the insertion of the iris to its posterior limit.

2d. Application of a solution of bromide of ammonium, (40 to 60 grs. to ℥j. pure glycerine,*) or nitrate of silver to conjunctiva; the former to all parts of the conjunctiva, and the latter to that covering the cartilage of the lids only.

3d. Scarification of the lids and deep incisions into the chemosis, if required, removing the blood with tepid water so long as it continues to flow.

4th. Atropia in solution (iv. grs.–℥j.) sufficient to dilate the pupil.

5th. Application of firm, hard, continued pressure, as soon as practicable, and continued to the close of acute symptoms.

6th. Remove the dressings twice during every twenty-four hours, until the purulent discharge ceases.

7th. Two applications daily of bromide of ammonium or one of nitrate of silver will be found sufficient. Atropia may be used twice daily or oftener, but care should be taken not to continue its employ beyond *producing* and *maintaining moderate* dilatation of the pupil.

8th. A constitutional treatment adapted to the condition of the patient.

It is evident that no single remedy or means should be exclusively relied on in the treatment of purulent or gonorrhœal ophthalmia; but each case, and even each eye, must be managed

* Glycerine perfectly pure should be used.

in accordance with its existing conditions, and the varying symptoms promptly met by appropriate means. In this way we shall be justified in prognosticating favorable results in most cases.

In closing, it is sincerely hoped the special principle of treatment so prominently set forth in this article, as well as all others having anything unusual of application or otherwise will be rigidly tested, and the results made known to the profession.

ON DIPHTHERIA.

By EDWARD HEADLAM GREENHOW, M.D., F.R.S.C.P.

Assistant-Physician to the Middlesex Hospital, &c.

Gentlemen,—I propose to bring before you the subject of Diphtheria, and to take, as the basis of my lecture, two cases which have recently been in the hospital, and which were characteristic examples of the two principal varieties of this formidable complaint—namely, of that form in which the urgency of the case is due to the local manifestations of the disease, and of that other form in which the danger arises from the general constitutional affection. The former of these is especially characterized by the existence of symptoms of apnœa, and the pressing danger is caused by the more or less complete occlusion of the air-passages by the membraniform exudation from which the disease derives its name of diphtheria. The latter, on the other hand, is characterized by the predominance of symptoms of asthenia, caused by the intensity of the general disease, and the danger to be apprehended is the gradual exhaustion of the vital powers. You should, however, fully understand, that although these two forms of diphtheria are so diverse in their more salient characters, and in the kinds of danger which attend them, there is yet no doubt of their being, as I have said, only varieties of one and the same disease, for they not only occur constantly during the same epidemic, but very often also in the same household at or about the same time. I have seen many examples of this, and one, which occurred only a few months ago, was especially striking, on account of the severity of both forms, causing death rapidly in both cases. I was called to see a young gentleman, aged fifteen, who had come home from school, I believe, with the complaint, and was suffering from the most urgent laryngeal symptoms, of which,

in fact, he died the same evening, almost immediately after the operation of tracheotomy. Four days afterwards, his sister, aged eight years, was taken ill with diphtheria of the other, the asthenic, form, which also ran an unusually rapid course, and proved fatal on the fifth day of her illness, without the supervention of any laryngeal symptoms. Another proof of the indentity of the disease in the two different forms is, that although, in many cases, their separate characters are as sharply marked as in my description above, yet other cases occur, side by side with them, which partake more or less of the characters of both forms. I say more or less, because, in fact, one of the two classes of symptoms does usually predominate.

Although the two varieties of diphtheria to which I propose directing your attention to-day, are the most important, I must remind you that they are by no means the only forms of this disease. In every epidemic there are many cases in which neither are the air-passages involved, nor are there any urgent symptoms of general constitutional affection. Many of these would, perhaps, at another time, be regarded merely as cases of common inflammatory sore throat; but, occurring as they do at the same time, and frequently in the same household with characteristic cases of diphtheria, we cannot but refer them to the same category. Several of you saw, the autumn before last, a rather severe case of diphtheria, which came from a house in the vicinity of the hospital in which sore-throat had previously been prevalent. The lad, aged sixteen, was a shoemaker's apprentice, and slept in the same room with three other boys. The family consisted of eight or nine persons, five of whom, including the three fellow-apprentices, had been under my care as out-patients in quick succession during the preceding fortnight, for sore-throat of varying intensity, but unaccompanied by exudation. Lastly, but still forming a part of the same epidemic—if I may be allowed to use the term to so limited an outbreak of disease,—this lad presented himself, with symptoms of so great prostration that we were compelled to take him into the hospital. His fauces were coated on both sides with the characteristic false membrane, and, although he made a good recovery, his illness was very severe. Albumen was found in his urine on the day after his admission, and he only regained health and strength after a prolonged and tedious convalescence. Again, cases characterized, it is true, by more or less diphtheritic exudation in the fauces, but unattended by any urgent symptoms, form a large proportion of every epidemic. Sometimes it even happens that almost all the cases in particular

epidemics are of this mild kind. Such cases usually recover under any rational mode of treatment, and it is the consequent great apparent success in treating them which has sometimes led even honest and worthy practitioners to promulgate as a specific for diphtheria some medicine with which they have treated large numbers of cases; the truth being, that by far the greater proportion of these cases required only common care, and would probably have recovered without any medical treatment at all. But although these mild cases so often do well with any or no particular medicine, I must not dismiss them without a word of caution to you, on the one hand against over-treating them, and, on the other, against neglecting them. I have seen serious mischief ensue from what I must term meddlesome treatment of such cases, especially when in the form of local applications; and yet even the mildest case requires careful watching, because, either by the invasion of the air-passages or by the accession of constitutional symptoms, a case which in the first stages appeared of the mildest kind may subsequently assume a most serious form.

With these preliminary observations, and begging you to bear in mind that I can only bring a small section of my subject, so to speak, before you to-day, I proceed to consider the first of the two grave forms of diphtheria which I have described, as it was exemplified in the more recent of our two hospital cases.

Mary Ann M., aged eleven years, was admitted into Northumberland ward on the 24th of April, under the care of my colleague, Dr. Thompson. She had been ailing with cold for about a week, and had sore-throat from the first. Two days before admission she had commenced coughing, and her voice had become hoarse; but, notwithstanding her indisposition, she had continued able to play about with her companions as usual in the open air, until the afternoon of Sunday, April 23d, when dyspnœa came on more decidedly, the cough and hoarseness increased, and she became so ill that, on the following morning, her mother procured her admission into the hospital. At the time of her admission her breathing was difficult, labored, and stridulous, and she spoke in a faint, husky voice. Her face was flushed, and the expression of her countenance anxious. Her skin was hot, pulse about 140, respirations about 24 in a minute. Mr. Waymouth, the clinical assistant, under whose observation she first came, states that at the time of her admission there was a small patch of false membrane on the fauces; but when I saw her, two or three hours later, this had disap-

peared. The case seemed so urgent that Dr. Thompson requested his colleagues, including myself, to see the patient, for the purpose of considering the propriety of performing the operation of tracheotomy. I found both tonsils enlarged, somewhat ragged-looking and reddened; the pillars of the fauces were also a dusky-red color, and the glands at the angles of the jaw, especially those on the right side, were slightly enlarged. The tongue was moist, coated with a white fur. The urine was normal in appearance, and contained no albumen. On examining the anterior part of the chest, I found a deficiency of resonance in the left infraclavicular region, and the respiration on both sides of the chest sibilant, with slight rhonchus in the upper part of the left lung. I was informed that there was dulness on percussion over the greater part of the left side of the thorax posteriorly, but the child was so ill that I did not attempt to verify this fact for myself. Immediately after the consultation tracheotomy was performed by Mr. Moore, and I shall presently state to you what were my own views of the case, and the grounds on which I advocated a decision in favor of operating. From two and a-half to three ounces of blood were lost during the operation, and the pulse at once fell to 128, but shortly became exceedingly feeble. The respirations became comparatively tranquil, and the child fell into a quick sleep. At eleven P.M., the pulse was 140, the respirations 34; the patient had slept well at intervals, and had partaken freely of the strong beef-tea and brandy ordered for her. On the 25th, it was reported that she had passed a good night, and had taken abundance of nourishment. She was perfectly calm, her pulse from 130 to 140; but the respirations, though unembarrassed, were very frequent, being nearly 50 in a minute. The breathing was found to be tubular, and the percussion resonance dull over the whole of the left side of the thorax posteriorly; the respiration over the right scapula was also slightly bronchial; the deficiency of resonance and bronchial breathing below the left clavicle remained as before the operation. Throughout the day and night she continued stationary, coughing a good deal, but expectorating freely, until early dawn on the morning of the 28th, when she became restless, and began to have difficulty in rising the expectoration. During the day her breathing became more and more embarrassed, and she gradually sank, and died at half-past four P.M., about 48 hours after the operation.

At the *post mortem* examination, a shallow, ragged ulcer was found on the surface of each tonsil, but both throat and fauces were free from exudation. A small patch of false membrane

was lying loose on the under surface of the epiglottis, and the larynx and also the trachea, for the space of an inch and three-quarters downwards, were almost entirely lined with a tough, false membrane of about the thickness of kid leather, for the most part lying loosely on the mucous surface, but here and there so firmly attached as to require much force to tear it away. The incision made by the operation had passed directly through this membrane. The larynx, trachea, and bronchi contained a large quantity of tenacious, muco-purulent secretion. The mucous membrane of the larynx and trachea was generally somewhat reddened, and presented distinct patches of a still deeper redness. On tracing the left bronchus downwards from its origin, the smaller tubes were found to be inflamed and filled with thick mucus. The upper lobe of the left lung was collapsed, and the posterior part of the lower lobe was dark-colored and much congested. The right lung was also slightly congested, but otherwise appeared to be normal. The rest of the viscera were healthy.

I have spoken of this case as illustrating one of the forms of diphtheria, because I regard it as having really been a case of that disease, and not of ordinary croup; I am led to this conclusion by the fact that sore-throat, although of a mild kind, had preceded the laryngeal symptoms for some days, and still existed at the time of the patient's admission to the hospital. This accords with the ordinary history of diphtheria affecting the air-passages; it commences in the fauces, and usually, after a shorter or longer interval, creeps downwards into the larynx and trachea. The interval between the commencement of the illness and the accession of laryngeal symptoms may indeed be very brief, sometimes not exceeding a few hours, but in my experience it has more frequently been several days, though very rarely protracted beyond a week. One reason why laryngeal diphtheria often appears to commence suddenly, is the fact, to which I have already adverted, that the early symptoms of cases which ultimately become dangerous are often of the mildest character, and consequently sometimes altogether escape the observation of friends or attendants until the symptoms of actual croup give the alarm. Last autumn I saw, at the request of her medical attendant, a little girl, aged four years, whose indisposition had been so entirely overlooked by her parents, that they had brought her up from the country only a few hours before I saw her, and until the dyspnœa and stridulous breathing suddenly came on, and induced them to send for medical advice, were purposing to take her on to Gloucestershire. Yet not only

were the tonsils enlarged, with a patch of exudation, the size of a sixpenny-piece, on each, but the fauces were generally injected, and the glands at the angles of the lower jaw swollen: showing, beyond doubt, that the disease must have been progressing for some days, even if we had not ascertained on inquiry that the child had had slight sore-throat for nearly a week, which had not, however, prevented her from taking her food, and going about as usual. In fact, in that case, as well as in the case we are considering, it was evident to me, when first called on for an opinion, that the disease had already reached a stage in which, unless speedily relieved, the patient could not survive many hours, and in which the only possible modes of relief were either by means of the spontaneous expulsion of the false membrane, which I felt assured was choking up the larynx or trachea, or else by means of the artificial admission of air to the lungs through an opening in the trachea. Now and then, though very rarely, I have known cases of this kind recover, when apparently desperate, in consequence of the spontaneous separation and expulsion of a mass of false membrane, bearing a more or less close resemblance in shape to some portion of the air-passages. I had, some time since, in my possession two such portions of false membrane, one of which formed an exact cast of the lower part of the trachea and the first portion of the bronchi, and the other an accurate cast of the larynx and upper part of the trachea. Both had been expelled by patients who were apparently almost moribund, and in both cases the expulsion was followed by recovery. I also, some years ago, found in the *post mortem* examination of a little girl, whom I had seen once a few hours before death, a deposit of false membrane lining the whole of the larynx, and extending nearly an inch downwards into the trachea. This false membrane formed a complete tubular cast of the parts, but was almost entirely loose, being only attached at a few points to the mucous membrane which it overlaid. Thick and dense in the larynx, it became gradually thinner in the trachea, until it terminated in an extremely thin, soft, and scarcely coherent pellicle. The child had died very suddenly a few hours after I had seen it, and the immediate cause of death appeared to have been the partial detachment of the false membrane lining the larynx, which had choked the passage, and barred the admission of air. I was much mortified to find, after death, that possibly the operation of tracheotomy might have saved the child's life, and that the false membrane, being loose, might not improbably have been seized with a pair of forceps, and drawn through the wound.

I should add, however, that the spontaneous detachment and expulsion of the membraniform exudation, whether entire or in flakes, by no means ensures the patient's recovery. The temporary relief is indeed, for the most part, very remarkable, and encourages the hope that the patient—who, although only a short time before apparently in the last struggle for life, may now be sleeping calmly—is on the road to perfect convalescence; and in some instances this may really be the case. But such hopes are often too illusory, for the same tendency to repeat renewal of the false membrane by fresh exudation, which is frequently seen in diphtheritic affections of the fauces, exists also in the larynx: and, unless the local inflammation itself be upon the wane, it is too frequently found, a few hours after the expulsion of the former cast, that a new one occupies its place, and that the patient is in a worse state than before, being less able to cope with the fresh attacks of dyspnœa, and less likely to have strength to expel the obstruction. In fact, as long as the inflamed mucous membrane continues to pour out the liquid exudation which coagulates into the diphtheritic deposit, so long must the process of formation go on. It is by the persistence of this process that what was of a mere semi-transparent pellicle on the fauces becomes, in the space of a few hours, a dense membrane, and that the latter often increases in thickness from day to day, notwithstanding the waste going on at its free surface. And so, therefore, I regard it as probable, seeing the great rapidity with which the membrane reforms upon the fauces when it has been artificially detached, that, unless the inflammatory affection be really on the decline, the process of exudation and coagulation may go on for a time even more rapidly after the expulsion of the false membrane from the larynx than whilst it still covered the diseased surface.

To return, however, to the case of our little hospital patient. I was convinced, as already said, that the only possible chances for her life lay either in the almost immediate expulsion of the false membrane, or in the speedy performance of tracheotomy. The former is, as I have explained, an event of rare occurrence, never to be counted on in any particular case, and the issue of which is exceedingly uncertain when it does happen; the latter alternative of operation has very frequently failed in such cases, and seemed especially likely to do so in a case in which the left lung was already partially consolidated, and the bronchial membrane probably inflamed. Nevertheless, considering that the child's sufferings were urgent, that its death, in a few hours, seemed inevitable unless relief could be given by the operation,

and that there were no severe constitutional symptoms to contra-indicate tracheotomy, I spoke very decidedly in favor of its being performed. The event proved that in the circumstances the operation was not only justifiable, but right, for it was scarcely over when the child's breathing became comparatively tranquil, and she fell into a quiet sleep almost as soon as laid down in bed; and although it is true that in this case, as in too many others, life was not saved, it was certainly prolonged, the most urgent suffering was permanently relieved, and death came in a gentler and less distressing form than it would otherwise have done.

The immediate causes of death in this case were, doubtless, the collapse of lung, and the plugging up of the trachea and primary bronchi with tenacious mucus, which the child was unable to get rid of by expectoration; for the lung-tissue, although collapsed, was not inflamed, and the bronchitis was scarcely in itself severe enough to have proved dangerous, except as a complication of the graver disease. In fact, however, I regard both the bronchitis and the collapse of the lung as having resulted from the laryngeal affection; the former having probably been mainly occasioned by the gravitation downwards of the acrid fluids from the larynx and trachea consequent upon the patient's inability to expectorate. The collapse of lung doubtless arose, as it so often does in the bronchitis of children, from the imperfect admission of air into the lungs during inspiration, partly in consequence of the obstruction in the larynx and trachea, partly from the choking of the bronchial tubes with tenacious mucus. This latter again, was in a great measure owing to the inability to cough it up, consequent on the want of power to take such a full inspiration as necessarily precedes the act of coughing. This was therefore eminently a case of diphtheria, fatal in consequence of the local manifestations of the disease, and it was in the conviction that these constituted the real danger of the case, that I entertained no doubt respecting the propriety of endeavoring to save the patient by tracheotomy.

Medical Societies in Canada.—Our neighbors in Canada are active in establishing medical societies. Two have recently been formed,—the "Medico-Chirurgical Society of Montreal," and the "Quebec Medical Society." Dr. George W. Campbell is President of the former, Dr. F. A. H. Lame of the latter.—*Medical & Surgical Reporter.*

ON THE ANTAGONISM OF ATROPIA AND MORPHIA, FOUNDED UPON OBSERVATIONS AND EXPERIMENTS MADE AT THE U.S.A. HOSPITAL FOR INJURIES AND DISEASES OF THE NERVOUS SYSTEM.

By S. WEIR MITCHELL, M.D., WM. W. KEEN, M.D., and GEO. R. MOREHOUSE, M.D.

During our connection with the U.S.A. Hospital for Injuries and Diseases of the Nervous System, we have been obliged to resort to every possible expedient for soothing the pain of those terrible cases of neuralgia, which, in some shape, are apt to follow as a consequence of neural injuries. Among these means, incessant use has been made of hypodermic injections, which alone, in many instances, seemed able to overcome the anguish of certain forms of neuralgic distress. To what extent we have employed this mode of relief may be gathered from the fact that, at certain periods of our service, the resident surgeons made every day from twenty to thirty subcutaneous injections. In one case, half a grain to a grain of morphia was injected thrice a day, and the man finally recovered, after having used nearly four hundred injections.

We were naturally led to examine with care into the pretensions of the several agents which have credit for their power to lessen or destroy the sense of pain. The results of this inquiry were of the more value, because they were confined to the use of these agents by injections only, and because they were studied by more than a single observer. Our investigation brought us finally to consider the therapeutic relations of atropia and morphia, to which subject the greater bulk of this paper will be devoted.

The information which our note-books give in regard to the comparative value of remedies used to allay pain, is the result of an almost unexampled experience, and we shall not hesitate briefly to relate it before passing on to our main topic.

After repeated trials of conia, atropia, and datura, with the intention of relieving pain by their subdermal use, we ceased to resort to them. On the other hand, the employment of morphia, or of some preparation of opium for subcutaneous use, became a part of the every-day routine of practice.

Like others, we have met with certain inconveniences attendant upon this mode of employing morphia. In rare cases it always caused distressing sick stomach, but as the pain for

which we used it was oftentimes agonizing, the patient usually preferred to endure the sick stomach rather than fail of the delightful relief he obtained from the injection. In these instances it was commonly observed that the morphia ceased after a time to produce either nausea or emesis.

The local annoyances resulting from injections so long continued and so numerous, were sometimes very embarassing, for though in some men they could be used in the same limb week after week, in others the numerous punctures produced a very unpleasant increase of sensitiveness in the part. Such an instance may be found on page 151, Case 31, of our treatise on wounds and other injuries of the nerves. In other persons, the injections gave rise to occasional abscesses, and in a soldier who was at one and the same time the subject of a very painful wound of the arm, and of a cold abscess on the back, every injection gave rise to a large indolent abscess. One instance of erysipelas following the use of an injection was seen by us. (*Op. cit. p.* 150.)

As the opinion of many good observers is quite decided as to the fact that the injection gives the same relief, whether made near to or remote from the seat of pain, we may with reason be asked, why we used so many injections in the same limb or neighborhood. The answer lies in the fact that our patients very early, and we, ourselves, later and more reluctantly, reached the conclusion that the point at which the injection was to be employed was not a matter of indifference. In the milder instances of neuralgia, a subdermal injection of morphia used anywhere in the body did give relief, but in cases of "burning neuralgia," such as we have described in our book on nerve wounds, *p.* 100, *et seq.*, the nearer we could bring the agent to the place where the pain was felt, the greater was the ease obtained. We are the more anxious to insist upon this matter, because we neglected to make the same comment when detailing our mode of treating these lesions in the volume above mentioned. The belief thus reached, is certainly not altogether unphysiological, as we very well know that morphia is capable of causing a local paralysis of sensory nerves, with which it may come in contact. * * * * *

If we be correct in the views expressed in the foregoing pages, certain practical lessons of some value may be learned from them.

If atropia lessens or destroys the unpleasant influence of morphia on the cerebrum, but does not alter its power to allay pain, there seems no reason why we should not use them together so

as to obtain all that is best from the morphia with the least amount of after discomfort.

We have certainly had good results from such a use of both drugs, in the form of suppositories, in cases of disease of the bladder or generative organs.

Again, it is sometimes desirable to use either drug in very full doses. This we may do quite fearlessly, when assured of our ability to restrain its action by a full exhibition of its opponent.

The foregoing experiments and observations authorize us, we think, to draw the following conclusions as to the use of hypodermic injections, and as to the antagonism of atropia and morphia:—

J...ges. The first chapter is devoted to a com... anatomy and physiology of the skin; and the second to its pathology, and the classification of its diseases. The remaining twenty-two chapters are devoted to the detailed description and treatment of the different varieties of cutaneous disease.

Though we do not like the author's manner of grouping or classifying the diseases of the skin, in all respects, yet the work is a plain practical treatise, admirably adapted to the wants of medical students. It is sufficiently full, yet not too voluminous, for a good text-book. We fully endorse the closing paragraph of the author's preface. He says:—"Our aim has been to simplify, to endeavor to restore to general medicine, a department of much interest and importance, and, by furnishing the student with a clear view of these diseases, to remove them from the narrow sphere of Specialism to the wider and nobler field of Catholic Medicine."

For sale by W. B. Keen & Co., Lake Street, Chicago.

Lectures on the Diseases of the Stomach, with an Introduction on its Anatomy and Physiology. By Williams Brinton, M.D., F.R.S., Physician to St. Thomas' Hospital. From the second English edition. Philadelphia: Lea & Blanchard. 1865.

This is a full-sized octavo volume of 302 pages; embracing eight lectures, besides the preliminary chapter on the Anatomy and Physiology of the Stomach. The first chapter relates to the Symptoms of Gastric Diseases generally; the second, to the Morbid Anatomy, or *Post Mortem* Appearances; the third, to

11. Atropia has no ability to alter or lessen the energy with which morphia acts to diminish sensibility or relieve the pain of neuralgic disease.

12. As regards toxic effects upon the cerebral organs, the two agents are mutually antidotal, but this antagonism does not prevail throughout the whole range of their influence, so that, in some respects, they do not counteract one another, while, as concerns one organ, the bladder, both seem to affect it in a similar way.—*Amer. Jour. of the Med. Sciences, and Boston Med. and Surg. Jour.*

[illegible] and the same time the subject of a very [illegible] wound of the arm, and of a cold abscess on the back, every injection gave rise to a large indolent abscess. One instance of erysipelas following the use of an injection was seen by us. (*Op. cit. p.* 150.)

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skin over the epigastrium is not only deeply yellow, but presents numerots small red spots, like minute spots of extravasated blood. The extremities are cool; the expression of countenance dull; lips dry; tongue moderately coated with a brownish fur: pulse small, weak, and 110 per minute: stomach so

THE STUDENT'S BOOK OF CUTANEOUS MEDICINE AND DISEASES OF THE SKIN. By ERASMUS WILSON, F.R.S. New York: WILLIAM WOOD & Co., 61 Walker Street. 1865.

This is a good-sized volume, of 445 pages; good type, fair paper and binding. It is, in fact, an abridgment or condensation of Wilson's well-known voluminous work on cutaneous diseases. The first chapter is devoted to a consideration of the anatomy and physiology of the skin; and the second to its pathology, and the classification of its diseases. The remaining twenty-two chapters are devoted to the detailed description and treatment of the different varieties of cutaneous disease.

Though we do not like the author's manner of grouping or classifying the diseases of the skin, in all respects, yet the work is a plain practical treatise, admirably adapted to the wants of medical students. It is sufficiently full, yet not too voluminous, for a good text-book. We fully endorse the closing paragraph of the author's preface. He says:—"Our aim has been to simplify, to endeavor to restore to general medicine, a department of much interest and importance, and, by furnishing the student with a clear view of these diseases, to remove them from the narrow sphere of Specialism to the wider and nobler field of Catholic Medicine."

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The following works have been received, and will be more fully noticed hereafter.

THE USE OF THE LARYNGOSCOPE IN DISEASES OF THE THROAT, &c. By MORRILL MACKENZIE, M.D., London, M.R.C.P. Philadelphia: LINDSAY & BLAKISTON. 1865.

RESEARCHES ON THE MEDICAL PROPERTIES AND APPLICATIONS OF PROTOXIDE OF NITROGEN, OR LAUGHING GAS. By GEO. J. ZIEGLER, M.D., &c. Philadelphia: LIPPINCOTT & Co. 1865.

LECTURES ON INFLAMMATION, BEFORE THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. By JOHN H. PACKARD, M.D., &c. Philadelphia: J. B. LIPPINCOTT & Co. 1865.

LECTURES ON FEVER, &c. By A. P. MERRILL, M.D., &c. New York: HARPER & BROTHERS, Publishers. 1865.

PHYSICIAN'S VISITING LIST, DIARY, AND BOOK OF ENGAGEMENTS, FOR 1866. Philadelphia: LINDSAY & BLAKISTON. 1865.

For sale by W. B. KEEN & Co., Lake Street, Chicago.

Editorial.

DUODENO-HEPATITIS, OR ACUTE JAUNDICE. THE SUBSTANCE OF A CLINICAL LECTURE IN THE MERCY HOSPITAL, OCTOBER 23D, 1865.

BY N. S. DAVIS, M.D., Prof. Clin. Med., &c., Chicago, Ill.

GENTLEMEN:—The patient before you is a man, aged about 26 years, who was admitted to the hospital three days since. He had been sick two weeks previously. You see, at a glance, that his whole cutaneous surface is of a deep yellow color; the conjunctiva is as yellow as though painted with gamboge. The

skin over the epigastrium is not only deeply yellow, but presents numerots small red spots, like minute spots of extravasated blood. The extremities are cool; the expression of countenance dull; lips dry; tongue moderately coated with a brownish fur; pulse small, weak, and 110 per minute; stomach so irritable as to reject, by vomiting, most of the nourishment or drink given to the patient; bowels quiet, but not constipated; urine scanty and of a very dark, reddish-brown color. Patient complains of great weakness and weariness, with a sense of oppression at the epigastrium. Though the universal distribution of the coloring matter of bile, so visible in the whole exterior of the patient, indicates some disease or obstruction connected with the liver, yet you perceive that a close physical exploration, by palpation and percussion, affords no evidence of enlargement of that organ; but we find decided tenderness to percussion or firm pressure over that part of the epigastrium corresponding with the position of the doudenum and hepatic ducts.

What is the nature of the disease under which this patient is suffering? Many of you will be prompt to answer, in popular language, that it is a plain case of jaundice. But jaundice simply means yellow, and is, like dropsy, a mere symptom. The term gives us no information in relation to the pathology of the case. The jaundice, or yellow color, is merely a symptom, indicating the retention of the coloring matter of bile, and its deposit in the various structures of the body. It does not, with certainty, indicate any form of hepatic disease; much less that the secretory function of the liver is torpid or inactive. On the contrary, the abundant diffusion of bile throughout the system, not only coloring the tissues, but passing off freely in the urine, perspiration, &c., shows that the secreting cells of the liver so far perform their office as to cause the elements of bile to unite and form an abundance of that fluid, but it does not pass off through its natural channel, the hepatic duct. Hence, while the conjunctiva, skin, urine, &c., are all highly colored, the fœces are clay-colored, or whiter than natural. This failure of the bile to pass off through the hepatic ducts

may arise from three widely different pathological conditions. It may be caused by such an alteration in the sensibility or properties of the capillary extremities of the hepatic ducts as will prevent them from taking up the bile as it is secreted in the lobules of the liver, leaving that office to be performed by the venous capillaries through which the bile passes back into the blood, instead of through the ducts to the duodenum. The second condition is that of simple mechanical obstruction of the larger hepatic ducts. The most common cause of this, is the formation of biliary calculi. The obstruction from this cause may be only temporary, as when a calculus is delayed in its passage, creating great pain, sympathetic gastric irritation, and general depression, ending suddenly when the calculus finally passes from the duct into the duodenum. Or it may be permanent, as when similar calculi accumulate in the gall-bladder and remain there for years. But the third, and most common cause of jaundice, is a subacute inflammation of the mucous membrane lining the duodenum and the *ductus communis coledochus.*

You are aware that the two constant or essential elements of inflammation are, morbid excitability of the diseased structure, and accumulation of blood in its capillaries; and the most constant accompanying effect is increased bulk or tumefaction. If you remember that the *ducius communis* is scarcely larger than a crow's quill, and that it opens into the intestines obliquely, you will readily perceive that a very moderate tumefaction of the mucous membrane, lining that part of the duodenum where the duct opens, would be sufficient to obstruct the opening and render the passage of bile very slow, or stop it altogether. And if the inflammation causing the tumefaction should extend to the lining membrane of the duct also, you readily perceive how it would almost necessarily render the obstruction complete while such inflammation should continue. It is to this last class of cases that the patient before you belongs. It is, indeed, a very strongly marked representative of the class.

Let us examine a little more closely the essential phenomena or symptoms of this case. If you note the sounds carefully, as I percuss, you will readily detect the line where pulmonary

resonance ends and hepatic dulness begins, and, as I move downwards, you will distinguish, still more plainly, where the latter dulness ends and the intestinal resonance begins. You are thus enabled to measure the exact vertical depth of the liver. If we extend the percussion to the left, over the epigastric region, we again find the hepatic dulness ceasing before we reach the centre of the latter region, thus determining the limits of the left lobe. By this examination, you learn that the liver, in this case, occupies no more than its natural space. And you also learn another thing of great importance, namely, the exact location and extent of tenderness. While percussion was going on over the right hypochondriac region, occupied by the liver, you perceived no indications of pain or soreness manifested by the patient; but so soon as the act extended to the right margin of the epigastric region, the patient began to give signs of suffering. In this patient there is decided tenderness over the whole epigastric region, but more acute at the right lower margin of that region, which is directly over the point where the biliary duct enters the duodenum. You will find some tenderness in that locality in almost every case of this variety of disease. There is also a sense of heaviness, or oppression, that is annoying to the patient, and is generally increased, with some feeling of nausea, from half to three-quarters of an hour after taking food. In the patient before you, this feeling of oppression and disposition to vomit is more strongly manifested than is usual in the class of cases to which it belongs. All the important symptoms point to the duodenum and common hepatic duct, as the principal seat of the disease; and they equally point to a mild grade of inflammation, as the form of disease existing. The disturbed condition of the digestion, especially the latter stages of it, with frequent nausea, sense of heaviness, and tenderness in the right and lower part of the epigastrium, clearly indicate both the seat and the inflammatory nature of the disease. As this inflammation is usually of a mild grade, it seldom causes the death of the patient, and consequently the opportunities for *post mortem* examinations have been few.

The disease occurs most frequently in the Autumn, during the first cold and wet weather. In this city, we meet with cases every year, during the months of October and November; and sometimes the cases are so numerous as to well-nigh merit the title of epidemic. About ten years since, during the Autumn, the disease was so prevalent in this city, that more than sixty cases came under my care within thirty days. A few of the cases in that season assumed an unusual degree of severity. The only fatal case that occurred directly in my own practice, was that of a female six months advanced in pregnancy. The disease commenced with the usual symptoms, and after the system had become thoroughly impregnated with bile, the secretions and whole cutaneous surface deeply yellow, the gastric irritability became so great that nothing was retained on the stomach, the urinary secretion diminished, day by day, until it was entirely suppressed; the surface assumed a darker, more bronzed hue; the mental dulness increased, until it became coma; and in that state uterine contractions commenced, expelling the fœtus and placenta, followed by the loss of only a few ounces of blood, and without the slightest apparent consciousness of the patient. A few hours after this, the acts of vomiting became more like an involuntary regurgitation of a large quantity of a dark coffee-ground fluid, closely resembling the black-vomit of yellow fever. The patient died in a few hours. No *post mortem* examination was allowed in that case; but during the same season, a fatal case occurred in the practice of a neighboring physician, which was uncomplicated with pregnancy, and in which a *post mortem* examination was allowed. No important local lesions were found, except in the mucous membrane of the duodenum, hepatic ducts, and central portion of the liver. The mucous membrane of the duodenum was intensely red throughout its whole extent, except some spots where it had assumed a dark hue. It was thickened or tumefied, and, in the darker colored places, softened. The membrane lining the hepatic ducts from the orifice in the duodenum to the smaller branches in the liver, were in the same pathological condition. The gall-bladder was moderately distended with

healthy-looking bile, and its interior surface appeared to be free from inflammation. No biliary calculi were found. The liver appeared to be very slightly enlarged, color natural over the convex surface, but paler than natural over a part of the under or concave surface, especially around the entrance of the vessels and ducts. This alteration of color extended into a portion of the interior structure, which seemed to be softened and moderately infiltrated with fat globules.

You will see that the results of this examination fully confirm the opinion, already expressed, as to the seat and inflammatory nature of the disease under which our present patient is laboring. If the patient is thus laboring under an inflammation of the mucous membrane of the duodenum and hepatic ducts, causing sufficient tumefaction to obstruct the free flow of bile, thereby inducing the jaundiced color; the oppression and tenderness in the epigastrium; the imperfect digestion, with frequent sense of nausea, and sometimes vomiting, what are the rational indications for treatment?

The patient feeling oppressed and sick in the epigastric region, and his friends seeing his eyes begin to look yellow, very naturally concludes that he is bilious, which term is used to express some vague idea of the retention of bile on the stomach, and, consequently, hastens to swallow a dose of active physic, or an emetic, or both, for the purpose of carrying it off. And we have occasionally met with physicians who had prescribed the same remedial agents, and followed their operation by other remedies directly calculated to act on the liver, to increase the secretion of bile.

After what has been said of the nature of this disease, and the fact that the bile does not exist in the stomach in any quantity, I need not say that such harsh evacuants as emetics and cathartics, especially in the early stage, are worse than useless. They not only fail to afford any of the relief that the patient expected, but they frequently so increase the irritation of the mucous membranes as to cause a persistent disposition to vomit, and sometimes diarrhœa. And to give remedies directly calculated to increase the secretion of bile before the obstruction

had been removed from the ducts, would be as absurd as to give diuretics while the bladder was retained full of urine, by a stricture of the urethra.

The plain indications in this, and all similar cases, is to allay the irritation of the mucous membrane and diminish its vascularity, thereby removing the tumefaction, and, consequently, the obstruction of the ducts. It is desirable also to promote, as far as possible, the action of the skin and kidneys, that the excrementitious matters of the system may be more fully eliminated. These objects can usually be accomplished by very simple remedial measures. I usually commence the treatment of such cases by giving one of the following powders every four hours, until six have been taken:—

℞. Hydrarg. Chlorid. Mite, ---------- 10 grs.
Pulv. Doveri,---------- 30 grs.
Nit. Potassa,---------- 30 grs.

Mix, divide into six powders.

When these are all taken, if the bowels do not move spontaneously, a mild laxative should be given, after which the Dover's powder and nitrate of potassa may be resumed, and continued, with an occasional mild laxative, until the recovery is completed. In the milder class of cases, this will be all the treatment required. But if, as in this case, the stomach is so irritable as to induce frequent vomiting, the Dover's powder and nitrate potassa may be replaced by sulphate of morphia, one-quarter of a grain, and bi-carbonate of soda, 5 grains, in each powder, with leeches or counter-irritation over the epigastrium. If the urine has become very scanty, a teaspoonful of nitrous ether may be given between the powders. The nourishment should be bland and simple throughout the treatment; and, after the intestinal evacuations have become dark, green, or yellow, showing that the bile is passing freely through the ducts, if there is much debility, with impaired appetite, as is often the case, the mineral acids, especially the nitro-muriatic, may be given with much advantage. Sometimes there will be left a constant tendency to constipation. If so, one of the following pills may be given every night, or every night and morning, with benefit:—

℞. Ext. Hyoscyamus, ---------- 30 grs.
Ext. Taraxacum, ---------- 30 grs.
Sulph. Ferri,---------- 30 grs.
Pulv. Aloes, ---------- 15 grs.
Ext. Nux Vom., ---------- 15 grs.

Mix, and divide into 30 pills.

Such is the course of treatment which has been commenced, and will be carried out in the case before you, the progress and results of which will be observed by you at subsequent clinics.

PRACTICAL PHARMACY.

At the late meeting of the American Pharmaceutical Association, held in Boston, Dr. SQUIBB read a very interesting paper on Fluid Extracts which, if adopted by the Committee on Revision, will introduce a radical change in the above class of preparations. In the last edition of the Pharmacopea, the following plan was adopted as a basis for making nearly all the fluid extracts:—Sixteen ounces of a drug is directed to be percolated with from three to five pints of dilute alcohol, reserving and setting aside the first twelve ounces which pass through, the remainder is to be evaporated down to four fluid ounces, and the two solutions mixed together, making one pint of fluid extract. This certainly is a very excellent process, but unfortunately the high duty placed on alcohol rendered it impossible for the retail druggists to make these fluid extracts without sustaing a heavy loss, and in consequence, this branch of practical pharmacy fell into the hands of a few who manufactured them on a large scale, and were able to use suitable apparatus for collecting the alcohol again.

The following is a synopsis of Dr. SQUIBB'S paper, taken from the *Chemist's & Druggist's Circular*, for October:—Sixteen ounces of a drug, as for instance colchicum, is to be percolated with alcohol of suitable strength, adding one pint, and as soon as the alcohol disappears from the top, water is poured on till fourteen fluid ounces of percolate is obtained, this constitutes the fluid extract, there is to be no evaporation and no excess of alcohol added, and the fluid extract is a strong and a great

deal cheaper than if a gallon had been passed through it and evaporated down to a pint. Dr. SQUIBB also finds that fluid extracts, prepared either by this process or by that of the Pharmacopœia, are relatively stronger than the drugs from which prepared, while they are perhaps twice as strong as the majority of those sold by the leading manufacturers. The advantages of the above process, are:—First, it will entirely do away with both fluid extracts and the ordinary tinctures, replacing them with an article which can be made by any druggist, and will really represent a pint for a pound. Again, in consequence of no heat being used in the process, all the essential and volatile principles are retained unchanged; they can also be made for one-half the price of the present fluid extracts. These are very considerable advantages, and will certainly compensate for any confusions caused in adopting this new process.

Anticipating the decision of the Pharmaceutical Committee. I shall keep on hand a complete assortment of these concented tinctures for dispensing.

S. W. GILLESPIE,
Laboratory, Cor. Monroe and State Streets.

Chicago, Oct. 28, 1865.

THE MECHANICAL TREATMENT

OF

ANGULAR CURVATURE,

Or, POTT'S DISEASE OF THE SPINE.

By CHARLES FAYETTE TAYLOR, M.D., of New York.

THIS new method of Treatment, first brought before the Profession through the Transactions of the Medical Society of the State of New York, and attended with such marked success, is here offered in pamphlet form, convenient for transmission through the post. PRICE 35 CENTS.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

VOL. VI. DECEMBER, 1865. NO. 12.

Original Contributions.

ARTICLE XXXIX.

REPORT ON THE MEANS OF IMPROVING THE SANITARY CONDITION OF CHICAGO.

TO THE HONORABLE MAYOR AND COMMON COUNCIL OF CHICAGO:—The undersigned committee, appointed by a public meeting of the medical profession of this city, to recommend such measures as might be deemed important in relation to the sanitary condition of Chicago, more especially with reference to the anticipated prevalence of epidemic cholera, would, most respectfully, submit the following suggestions:—

That there are good and sufficient reasons for apprehending an epidemic prevalence of cholera in this country during the coming spring and summer, few who are conversant with the history of former epidemics of that disease, will be disposed to doubt. Hence, it is not only the part of wisdom and ordinary prudence, but it is the imperative duty of all municipal authorities to institute immediate and well-directed measures for preventing its prevalence, or mitigating its severity. While we freely admit that the primary or efficient cause of cholera may be some obscure and hitherto uncontrolled condition of the atmosphere, yet we claim that no fact in human history is better established than that local conditions exert a controlling influence in determining both the number of attacks and their fatality.

The local conditions known to be most efficient in promoting the prevalence and fatality of the disease may be included under the following heads, namely, *impure* and *damp air; unwholesome water; unwholesome food*, whether animal or vegetable; and excesses in the use of stimulating drinks, with neglect of personal cleanliness. That all these conditions exist in this city at the present time, in a highly aggravated degree, no reasonable man will deny. The naturally level surface of the soil, with an understratum of impervious clay, coupled with the very great neglect of occupants and owners of lots to connect them properly with the street sewers, causes the constant retention of sufficient surface water to impregnate the air with an excess of aqueous vapor; while the amount of animal and vegetable matter constantly left in the streets, alleys, gutters, and rear portions of lots, furnishes an abundance of noxious effluvia or gases to rise with the aqueous vapor, and, thereby, cause our city atmosphere to be both *impure* and *damp*. This is not only true of the *out-of-door* atmosphere, but is equally true of that in a large portion of the dwellings. Inspection will show that many hundreds of the houses in this city stand so directly over either standing water, or a soil so saturated, during all the spring, summer, and autumn months, that all the lower rooms are sufficiently damp to cause the rapid growth of fungi or mildew on books, clothing, and whatever is not used almost daily. This dampness, with its accompanying impurities, in our dwellings is a far more prolific source of disease, and especially of cholera, than the water and filth, so offensive to the eye and nose, in the open gutters of our streets. Hence, we shall earnestly call your attention to the measures necessary for remedying this evil.

Besides the accumulations of decomposable animal and vegetable matters, with water, in the streets, alleys, and surfaces of lots, the air of the city is further rendered impure by offensive emanations from sewers, cesspools, privies, stables, slaughtering, packing, and manufacturing establishments, &c., all of which are capable of being greatly mitigated, or entirely prevented, by the adoption of proper measures. The impure and unwhole-

some quality of much of the water used in this city is too well-known to need comment. That unwholesome food is often exposed for sale in our markets, and used by some classes of our citizens, is well-known; and no fact in the range of social science is better established, than that excessive use of alcoholic stimulants and personal uncleanliness very strongly predispose to attacks of cholera. Another very strong predisposing influence is found in the overcrowding of the sleeping apartments of boarding-houses and dwelling-houses of the laboring classes. Members of this committee can point to scores of small tenements in the central parts of our city, in the low and unventilated chambers (or more properly garrets) of which there are nightly just as many occupied beds as can be placed side by side, and leave room for a person to stand up between them. In this way, from twelve to fifteen adults are often confined in a quantity of air no more than sufficient to supply, properly, two. No intelligent physician, who practiced in this city during the cholera epidemics from 1849 to 1854, failed to observe the extremely injurious influence of such overcrowding. It was one of the most active influences in destroying thousands of the emigrants who crowded our city during those years. Having thus simply enumerated the chief conditions, now existing in our city, directly calculated to impair its sanitary condion at all times, and especially calculated to awaken any latent tendency to an epidemic of cholera, as well as to add ten fold to its malignity and fatality, when once begun, this committee will most respectfully and earnestly ask your attention to the following specific remedial measures:—

1st. The passage and rigid enforcement of such ordinances as will cause all lots, whether occupied or not, to be so connected with the street sewers and gutters as to relieve them from surface water, especially from under and immediately around dwellings. This is a matter of urgent importance in every section of the city, and as it can be properly done at the expense of the owners of lots, there is no reason why attention to it should be delayed.

2d. The immediate organization of a complete scavenger sys-

sem, for the prompt removal of all garbage and refuse matter from every part of the city, and the vigilant enforcement of its practical operation. This, and this only, would prevent the further accumulation of filth and decomposable materials, and allow a reasonable time for the removal of what already exists. If every part of the city should be thoroughly cleaned and placed in good sanitary condition to-morrow, without the daily operations of a complete and efficient scavenger system, before the expected cholera season, next spring, every street and alley, with many of the lots, would be again reeking with filth and pestilential emanations. Hence, the very first money placed at the disposal of those having in charge the sanitary interests of the city should be applied to the establishment of a permanent and efficient scavenger system for the whole city.

3d. A more vigilant patrol of the river and its branches, for the purpose of excluding therefrom every species of animal and vegetable matter of a decomposable nature, except that which necessarily escapes from the street sewers.

4th. The more extensive inspection of privies, stables, street and lot gutters, the premises of slaughtering, rendering, packing, soap and candle, and all other manufacturing establishments, and the most rigid enforcement of cleanliness; together with the adoption of measures for intercepting and neutralizing of noxious gases from cesspools and sewers. For the latter purpose, charcoal placed in proper gratings over the openings and outlets of cesspools and sewers, affords an effectual and cheap material, as has been thoroughly demonstrated in some of the worst districts of London. For open gutters and privies, lime and other disinfectants should be used.

5th. The removal, as fast as possible, of all present accumulations of decomposable and offensive materials from the streets, alleys, and lots of the city. This task should be commenced and prosecuted with sufficient vigor that, with the daily operations of a scavenger system, the first warm spring days in April next should find all parts of the city clean and free from those materials that have in all ages and countries given to pestilence its virulence and fatality.

6th. The prevention of overcrowding and want of ventilation and cleanliness in boarding and tenant houses. This, in the present crowded state of our city, may not be practicable to the full extent, yet a proper system of inspection and judicious instruction to property owners, as well as occupants, would do much to mitigate the evil. There is one branch of this subject, however, which, in view of a probable epidemic of cholera, is of very great importance, and is fully under the legitimate control of the city authorities. All the members of this committee who practiced medicine here through all the cholera epidemics from 1849 to 1854, vividly remember how large a share of the entire mortality was occasioned by the tide of emigrants and new-comers, who, by every boat and railroad train, came to fill the small, damp, and filthy boarding-houses and dwellings; themselves not only unused to the climate, but often loaded with personal filth and filthy baggage. We speak advisedly, when we say that more than half of all the deaths occasioned by the epidemics of those years, occurred among this class of our population and those in immediate contact with them. To prevent a similar state of things the coming season, we would earnestly call your attention to the propriety of establishing adequate and comfortable sheds or temporary buildings at convenient places on all the Eastern and Southern lines of communication, entirely beyond the city limits, where, during all the cholera season, (if such season comes,) all emigrants, with their baggage, shall be detained long enough to have themselves and clothing washed and ventilated, and such as are sick among them properly cared for. In connection with this, such arrangements should be made with railroad managers, that persons of this class, whose destination was in the interior of the country, should be transported from the established places of detention directly through the city, without unnecessary delay. Such an arrangement could be made to serve all the useful purposes of a quarantine, and greatly lessen one of the most active causes of epidemic fatality in the city.

7th. The establishment of *Public Urinals*, at convenient distances, in all the more densely populated parts of the city, and

the prohibition of the use of alleys and street corners for that purpose. The latter is not only an offence against public decency, but the impregnation of the soil in the alleys and around the street corners with urine is a prolific source of offensive and poisonous emanations. No species of animal matter more readily enters into decomposition, or emits elements more poisonous to the human system than urine. In connection with this, we would also strongly recommend the establishment of neat public fountains or drinking places. These would not only be a convenience to the poor and laboring classes, but they would deter thousands from resorting to the use of injurious and expensive liquids in the drinking saloons of the city.

8th. Finally, we would earnestly ask your immediate attention to the rigid exaction of certificates setting forth the cause of death, made by the attending physician, and returned to the proper officer, before permission is granted to bury the body. Such certificates should state clearly the age, sex, cause of death, and residence, signed by the physician. And in case no physician had visited the patient, that fact, with the probable cause of death, should be certified to by the sexton, and returned as in the other cases. All these certificates should be returned to a competent physician, who should see that they were properly made, placed on file, and properly tabulated for publication every week. By such a registry of deaths, it would be in the power of the city authorities to ascertain promptly, at all times, the occurrence of any unusual mortality in the city, and to trace it directly to the exact localities and classes of people giving rise to it; a matter of vital importance in every populous city. The present registry of deaths, so far as the *causes of the deaths is concerned*, is a ridiculous and shameful farce.

For the purpose of aiding in the prompt adoption and the judicious practical enforcement of the foregoing measures, we would suggest the propriety of selecting a permanent advising committee, consisting of five thoroughly competent physicians, who would be not only ready to aid the proper authorities in carrying out judiciously the measures already suggested, but would

also be maturing ready for adoption, if the emergency should come, proper plans and locations for temporary hospitals for those attacked with cholera, suitable dispensaries for the prompt aid of such as might be threatened with attacks, and such other matters relating to the means of preventing and mitigating disease as the circumstances might require. Such a committee, properly selected, while they would cheerfully render their advisory services gratuitously, would be able not only to ensure the adoption of more judicious measures, and their more efficient enforcement, but would also save to the city thousands of dollars, by causing the avoidance of such confused, useless, and sometimes positively hurtful measures as are always liable to be adopted when these things are left until the alarm and excitement of a fatal epidemic is upon us.

In presenting the foregoing topics for your consideration, we have avoided all allusion to mere theoretical questions as to the contagiousness or non-contagiousness of cholera, and have made such recommendations only as are universally conceded to be necessary by all intelligent members of our profession, both in Europe and America. While we would not utter one word calculated to create needless alarm, we feel it our imperative duty to warn you, as the legal guardians of our city's welfare, that every fact connected with former epidemics, as well as every indication afforded by the progress of the present one up to this time, renders it almost certain that this continent will be the theatre of cholera during the year 1866.

And no mere pecuniary considerations should deter those in authority from the most diligent and best directed efforts to remove all the causes that either invite its prevalence or increase its severity. Our citizens could better afford to raise a fund of an hundred thousand dollars, five times repeated, than to suffer such an epidemic as would arrest all business for six months, depreciate the sanitary credit of our city for years, and depreciate, correspondingly, the value of property, to say nothing of the loss of human life. That the adoption and faithful execution of the measures recommended in this report would so far improve the sanitary condition of this city that the expected

visitation of cholera would be rendered mild and comparatively harmless, we confidently believe. On the other hand, if these measures are neglected, and in their place only partial and spasmodic efforts made to clean out a few prominent streets and noted alleys, we just as confidently believe that before another Fourth of July comes, the insignia of mourning for the victims of cholera will be seen on every block in our city. But even if no cholera epidemic were ever to visit us, the sanitary measures recommended in this report, except simply that referring to quarantine stations and sheds for emigrants, would be imperiously demanded for protection against the annually increasing prevalence of cholera infantum, dysentery, and typhoid and typhus fevers, as well as for the comfort of our citizens, and the sanitary reputation of our city.

We therefore close this communication with an earnest prayer, that your honorable body will act on these subjects with that promptness and wisdom which should ever characterize those having the supervision of almost all that nearly 200,000 people hold valuable and sacred. And we fully pledge to your support, the best efforts of ourselves and our professional brethren of this city. All of which is most respectfully submitted.

Committee, { N. S. DAVIS, J. W. FREER, J. P. ROSS, H. HITCHCOCK, RALPH N. ISHAM, B. McVICKAR.

TYPHOID FEVER COMPLICATED WITH BRONCHO-PNEUMONIA.—CLINICAL CASES IN THE MEDICAL WARDS OF MERCY HOSPITAL. Substance of a Clinic.

By N. S. DAVIS, M.D., Prof. Clinical Medicine, &c., &c.

Gentlemen:—A few days since, I directed your attention to two cases of typhoid or enteric fever in this ward, each compli-

cated with serious pneumonic inflammation. One of them is still occupying the bed in which you saw him, towards the other end of the ward, and is now convalescent. He is a native of Norway, aged about 22 years, and had been sick ten or twelve days before his admission into the hospital.

At the time your attention was called to his case, he was presenting all the symptoms of the advanced state of typhoid fever, such as somnolency; muttering delirium; dry tongue and mouth; sordes on the lips and teeth; dryness of the skin, with congestion of cutaneous capillaries; tympanitic abdomen, with five or six thin, reddish-brown intestinal discharges daily. Upon this condition had rapidly supervened, during the three or four preceding days, short and hurried breathing, with loud bronchial ronchi over the whole anterior part of the chest, a mixture of dry and moist ronchi in the axillary and sub-axillary regions, and in the latter dulness on percussion. There was cough with a scanty expectoration tinged with dark blood, and the pulse was 120 per minute, small and weak. I then explained to you that the case presented all the phenomena of typhoid fever, with the enteric disease peculiar to that grade of fever well developed, on which had supervened universal congestion of the mucous membrane of the respiratory passages, with pneumonic infiltration of the middle lobes of both lungs, constituting a most dangerous condition, yet one frequently met with in this climate during the latter part of autumn and early spring.

You will remember that we directed a blister to be applied to his chest, while he took, internally, the emulsion of oil of turpentine and tincture of opium every four hours and one of the following powders between:—

℞. Pulv. Opii,---------- 6 grs.
Tart. Ant. et Pot.---------- 1 gr.
Sacchar. Alba,----------30 grs.

Mix, and divide into six powders.

Under that treatment he soon began slowly to improve. The symptoms of intestinal irritation first disappeared, and the ordinary anodyne cough mixture was substituted for the emulsion, and after four or five days the powders of opium and antimony

were restricted to one every night. As already remarked, that patient is now convalescent. The other to whom I directed your attention, at the same clinic, and whose chest you had an opportunity of auscultating, was a case of typhoid fever, presenting complications of the same nature, but much more severe.

The patient, a German, aged about 25 years, instead of being somnolent, was affected with constant delirium and sub-sultus; the intestinal discharges were not only more frequent, but they were mixed with mucus and blood; and the whole right lung, from the clavicle to the diaphragm, yielded a complete dull sound on percussion, and only very slight respiratory or vesicular murmur by auscultation. At first, a blister was applied to the right side of the chest, and the same remedies given internally, as in the case previously alluded to. After continuing this treatment two full days, the intestinal discharges and abdominal tympanites were much improved, but the delirium, the muscular tremulousness, and the oppression of breathing were much increased. The pulse was small, soft, and frequent. Thinking it very desirable to lessen the nervous jactitation and delirium, so as to induce some sleep, and finding the powders of opium and antimony to fail, I caused them to be omitted and fifteen drops of chloroform given in their place every three hours, alternated with the turpentine emulsion. In twenty-four hours after commencing the use of the chloroform, his pulse and respirations were slower; the sub-sultus less; and he obtained short intervals of quiet sleep. The bowels also remained quiet. Consequently the same remedies were continued, only at a little longer intervals. On the afternoon of the second day, he not only remained more quiet and rational, with a fair amount of sleep, but he coughed less, and there was decidedly less dulness over the upper lobe of the right lung, with a corresponding increase of respiratory murmur. The bowels had also remained without any evacuation, and the abdomen only slightly tympanitic. The amount of chloroform now to be administered was reduced to ten drops every four hours, and an anodyne cough or expectorant mixture given instead of the emulsion. On the fourth day after the first exhibition of the chloroform, the pa-

tient appeared so much improved, in all respects, that I thought his convalescence had fairly begun. He was consequently ordered to have more nourishment, and the use of the chloroform restricted to ten drops each morning, noon, and evening. During the latter part of the following night, however, the patient suddenly expired. The death was preceded by no new symptoms sufficient to attract the attention of the nurses, and no *post mortem* examination was permitted. The immediate cause of the patient's death is, therefore, left to conjecture. It might have been syncope from some unobserved attempt to rise from the bed, or from the formation of emboli or fibrinous clots in the cavities of the heart. The very small quantity of chloroform which he had been taking during the preceding twenty-four hours, could hardly be suspected of having induced excessive anæsthesia of the nervous centres. We have administered that agent, in doses of from 10 to 15 drops, in several cases of typhoid fever with pneumonic complications, in which there was constant delirium and sleeplessness, and in all previous instances with the most satisfactory results.

The case now before you is a German by birth, aged about 25 years. He was admitted to the hospital three days since, and was reported to have been sick about two weeks previously. At my first visit after his admission, his face was suffused with a dark red flush; lips and tongue dry; expression dull; skin moderately hot and dry; pulse 112 per minute, small and weak; respirations short, and accompanied by coarse, dry, bronchial ronchi over both sides of the chest, intermixed with a sub-mucous rhonchus over the middle and lower part of the right lung, with considerable dulness, on percussion, over the latter region. There was also frequent cough, with but little expectoration. The mind was dull and more or less wandering, and slight hemorrhage from the nose. The abdomen was quite full and tympanitic, and he had been having from three to five thin, brown fœcal evacuations daily. You will recognize in this assemblage of symptoms, as well as in the present aspect of the patient before you, a well-marked typhoid condition, with the usual enteric disease of the aggregated glands, and, in addition, a dry,

congested condition of the pulmonary mucous membrane, with considerable pneumonic engorgement of the middle and lower lobe of the right lung. To restrain the intestinal irritation and excessive evacuations, I directed him to have a teaspoonful of the turpentine and laudanum emulsion every four hours, and yesterday, finding the dry sounds still predominating in his chest, and the skin dry, I ordered one of the following powders to be taken between each of the doses of the emulsion:—

℞. Pulv. Opii,---------- 8 grs.
Hydrarg. Chlorid. Mite,---------- 6 grs.
Tart. Ant. et Pot.---------- 1 gr.
Sacchar. Alba,----------20 grs.

Mix, divide into six powders.

The object of this was to induce such a change in the functions of the skin and pulmonary membranes as would result in free secretion from both, and thereby lessen the congested condition of the pulmonary capillaries, and the tendency to further infiltrations into the pulmonary textures. The patient has taken the powders just named, alternated with the emulsion, during the past twenty-four hours, and if you now step forward and examine him, you see his face less flushed, lips and tongue less dry, though there is still a dry crusted strip through the middle of the latter, and some sordes on his lips. The skin is relaxed and universally wet with warm perspiration. His countenance is still dull; mind somewhat wandering; and you see a little blood on the upper lip, indicating recent slight epistaxis. If you watch the motions of the chest, you see that the respirations are short, and too much abdominal. If you now take the stethescope and, one by one, listen to the anterior and right lateral part of his chest, you will perceive, still more clearly, the imperfect expansion of the chest by inspiration, while you find the dry, wheezing sounds of yesterday replaced with moist or mucous rhonchi, intermingled with only an occasional coarse, dry sound. If you move the stethescope to the anterior margin of the axillary region, you will hear less respiratory sounds of any kind, but if the patient articulates sounds, you will have decided vibration of voice, indicating increased density of that

portion of thelung. Now, what is the exact pathological condition of our patient, and what the indications for further treatment?

The typhoid condition of the patient is strongly characterized; and though the general febrile condition is improved, as indicated by the soft and moist condition of the skin, the less tympanitic condition of the abdomen, and the more quiet condition of the bowels; yet the pulse is very soft, weak, and 115 per minute, the respirations are short, and the patient gives evidence of a feeling of exhaustion. He has evidently arrived at a critical period in his disease. He is vascillating to-day, between a tendency to convalesce on the one hand, and such a general depression of vital properties in his tissues as would soon cause a return of copious intestinal discharges, perhaps mixed with blood, with a rapid increase of infiltration into the pulmonary textures, followed by colliquative sweating, involuntary discharges and death.

Hence, it is necessary to adjust the further treatment with great care. If we continue the antimony and calomel in the powders, we shall increase the risk of the latter alternative. But if we can bring to our aid some agent calculated to give increased tone or contraction to the capillary system of vessels without restricting secretion, we may decide the progress of the case in favor of convalescence. With this view, we shall continue the turpentine and laudanum emulsion every four hours, and change the powders by substituting sulphate of quinine, 2 grs., and pulv. bloodroot, 1 gr., for the antimony and calomel in each powder, leaving the opium as before. As thus altered, one must be given half way between the doses of emulsion. Of course, in all such cases, the patient is carefully fed with animal broth, well-salted, and a porridge of sweet milk and wheat flour. The further progress of this case will be shown you at subsequent clinics.

NOTE.—This patient progressed well under the last prescription, and has since entirely recovered.

Selections.

ON THE PATHOLOGICAL APPEARANCES PRESENTED IN MARSH FEVER.

By J. FORSYTH MEIGS, M.D., one of the Physicians to the Pennsylvania Hospital.

In the admirable work on diseases of the liver, by Dr. F. T. Frerichs, the first volume of which was published in Breslau, in 1858, and the second in 1861, and which has been translated for and published by the New Sydenham Society—a work which must take its place as a model of medical observation and research—will be found a chapter entitled, "The Pigment Liver; Melanæmic Liver; Alterations in the Liver resulting from Intermittent Fever." My attention having been attracted with unusual interest to the facts and doctrines portrayed in that part of the work, I became anxious to ascertain whether the same pathological appearances as those observed by Dr. Frerichs could be found in cases of malarial disease occurring in this country.

The following cases were observed in the wards of the Pennsylvania Hospital of this city, during the past autumn, and, though few in number, they are sufficient to attest the accuracy of the statements made by Dr. Frerichs:—

The first case was that of a young unmarried woman who, when brought to the hospital, had been suffering for six weeks with intermittent fever, contracted in one of the lower counties of Maryland. The disease was tertian at first, from which it became quotidian, and so continued until the patient entered the wards. No quinia had been exhibited, and the disease therefore presented its natural characters uninfluenced by specific treatment. The patient was not very much reduced in flesh, but was excessively feeble, blanched in color, and had lost all appetite. The spleen descended two inches below the margin of the chest. She had a chill every afternoon, followed by fever and sweating, but exhibited no other signs of disease. On pricking the finger and placing a drop of blood under a quarter-inch lens, it was seen that the red corpuscles were not more than one-fourth as numerous as in health, the white corpuscles were about normal in quantity, but what especially arrested attention was the presence in the field of numerous

minute particles of irregular shape, with angular edges, of blackish color, and entirely opaque. These were the pigment granules of Dr. Frerichs.

The patient was put to bed. Sixteen grains of quinia were given daily, milk-punch, bread and milk, and beef-tea were ordered for diet, and the chills were arrested after the second day. Citrate of iron, five grains, three times a day, was ordered on the third day, the quinia was reduced to twelve, and then to six grains daily, and in a week the patient was convalescent.

Soon after this, three sailors were brought to the hospital from a vessel which had been lying four weeks in the harbor of Aspinwall, in the Isthmus of Panama, and which had been five weeks on the voyage from that port to Philadelphia.

I am indebted to two of the resident physicians of the hospital for notes of the cases, and for details of the *post mortem* examination, and of the microscopic appearances—to Dr. T. H. Andrews, for the former, and to Dr. Edw. Rhoads, for the latter.

Case I. Geo. H., aged 27, a native of New York, was admitted Nov. 12th, 1864. Whilst at Aspinwall, he had been seized with intermittent fever, at first tertian, and then quotidian in type. This was checked by quinia at first, then returned at one of the septenary periods, and continued until he reached the hospital. Owing to the disease and to poor fare on board ship, he had lost flesh rapidly. After admission, he had a chill every day, at one o'clock, lasting about half an hour, followed by fever and sweat. He had no appetite, suffered from constipation, was very pallid and feeble, but had no other material sign of disease, except decided enlargement of the spleen. A mild cathartic was exhibited; he was ordered thirty grains of sulphate of quinia in the first interval; milk-punch and beef-tea were given in quantities of a wineglassful every two hours alternately, and, the chills soon ceasing to occur, the quinia was reduced to sixteen grains. Under this treatment the patient improved rapidly and steadily, and, though still pale and weak, he decided to leave the hospital on the 21st.

Case II. G. S., aged 32, native of Ireland, admitted Nov. 12th, 1864. Has been a seaman for twenty years; was always strong and healthy, weighing about 150 lbs., but addicted to the use of alcohol to excess. About eight weeks before admission, whilst his ship was in the port of Aspinwall, was seized with intermittent fever, of a typhoid type, which was checked by the use of quinia. Soon after this, his legs became dropsical, so that when the vessel left Aspinwall he was disabled from

duty. During the voyage to Philadelphia, the fare on board ship was very poor, so that when he reached the hospital he was greatly reduced in flesh and strength. He now had anasarca of the lower extremities and of the trunk; ascites; excessive tympany; copious, watery diarrhœa; pallid, cool, and moist skin; pinched and anxious countenance; pulse 88, and feeble; respiration 36, and labored. The tongue was coated, and the appetite not bad, but he could take only small quantities of food, owing to the gastric distress which it caused. The spleen was enlarged and tender on pressure. No abnormal sounds in the lungs; heart sounds healthy. The urine was normal in amount, alkaline, specific gravity 1013, highly albuminous, containing in the nebulous deposit many pigment flakes and granules of variable size and color, usually reddish-brown. Blood drawn from the finger exhibited under the microscope more than the normal proportion of white corpuscles, with several pigment granules in each field. The red corpuscles appeared gelatinous, and not only gave up their coloring matters in the added water, but, for the most part, entirely dissolved, or left only a filmy residue.

He was ordered sulphate of quinia, eight grains daily, compound spirits of juniper, two drachms four times a day, infusion of juniper, half a pint daily, and a diet of milk-punch and essence of beef, a wineglassful every two hours alternately. Laudanum enemata were occasionally given to check the diarrhœa. His condition remained much the same under this treatment, when his friends, in spite of his extreme illness and exhaustion, removed him from the hospital on the 24th of November.

Case III. W. L., sailor, aged 23, native of New York, was admitted November 12th, 1864. Five weeks before admission he had sailed from Aspinwall, after lying in that port during about four weeks. Whilst in port, and engaged in cleaning the paint on the ship's sides, he was overcome with heat and exposure, was seized with headache, rigors, pain in the back, and diarrhœa, so as to be forced to take to his bed. During the passage home, which lasted five weeks, he had poor and insufficient food, was very weak, unable to do duty, and, in addition, his malarial disease became scorbutic, so that he was emaciated, and had sores on the wrist, hip, sacrum, and back. When brought to the hospital, he was in a condition of profound cachexia. The pulse was frequent and feeble, the skin not very hot, the urine scanty, the feet œdematous, and he was excessively feeble. The heart and lungs presented no marked symptoms or signs of disease.

He was ordered quinia, four grains every four hours, tincture of chloride of iron, ten drops every four hours, milk-punch and beef-tea, of each a wineglassful every two hours alternately. He was also allowed spinach, onions, and lemonade. He had an opiate at bedtime. The bowels were moved by an enema when necessary. He improved slightly at first, then sunk again, and died November 18th.

Autopsy (*from notes by Dr. Rhoads,*) *fourteen hours after death.*—Figure of medium height; extreme emaciation and pallor; ill-conditioned ulcers over prominent osseous points; rigor mortis very slight; muscles atrophied; feet œdematous.

Thorax.—Pleura smooth, clear, and healthy throughout; one pint of limpid, straw-colored fluid surrounding each lung; about one ounce of similar effusion in the pericardium; heart flabby, slightly dilated, distended; in the left ventricle a soft, gelatinous, dark coagulum, with colored serum; in the right ventricle and auricle, extending through the tricuspid and pulmonary valves, intertwining with the cords and adhering to the walls, a firm, white, fibrinous clot. Lungs in posterior inferior portions hypostatically congested and imperfectly expanded, but everywhere inflateable.

Abdomen.—Peritoneum smooth and clear, containing nearly six ounces of serous fluid.

Liver.—Firm, of a dark bronze color; weight four and three-quarter pounds; section surface mottled by the marked congestion of hepatic veins; gall-bladder partially filled with bile.

Spleen.—About twice the natural size; weight twelve ounces; soft; almost black.

Kidneys.—Not enlarged materially; cones congested; conspicuous in section.

Bowels.—Pale; no ulceration or thickening of their mucous membrane. The epithelium in the colon disposed to separate as from the healthy membrane after maceration.

Mesenteric glands.—Healthy in appearance.

Microscopic appearances.—The splenic pulp presented its usual elements, with a large excess of blood. Corpuscles unchanged, or in various conditions of disintegration. Scattered in great abundance over the field, both free and within the nucleated corpuscles, pigment granules, irregular in shape and outline, rounded or angular, varying in color from absolute black, with the strongest light, to the lighter shades of reddish-brown at the edges or throughout, and in size from the 100th of a line in diameter to a mere point.

Liver.—Hepatic cells healthy. Pigment grains everywhere

present; somewhat less numerous than in the spleen. They were not observed within the cell walls.

Kidneys.—Epithelial cells enlarged; incipiently fatty. More engorgement of the straight capillaries in the medullary than of those in the cortical portion. Similar pigment granules to those in the spleen and liver, but much less numerous.

Blood in cardiac cavities.—More than the normal proportion of white corpuscles. Marked deficiency of fibrin (except in old clot on right side). Red corpuscles individually much darker than in health; their coloring matter readily passing into and tinging water, on the addition of that fluid. Several pigment granules in each field.

Heart.—Muscular fibres healthy; capillaries filled with blood; an occasional aggregation of fine granules visible.

The *lungs* exhibited much pigment, but an excess over that usually found in the organs could not positively be affirmed.

Remarks.—Dr. Frerichs states that in individuals who die from the effects of marsh poison, there are frequently found peculiar changes in the liver, spleen, brain, kidneys, and blood, which evidently belong to the disease resulting from that poison. Believing that these discoveries have not been brought before the medical public of this country, as they deserve to be, I shall, in as few words as possible, quote them on this occasion.

The most important of these pathological appearances are the following:—The liver presents a steel-gray or blackish, or, not unfrequently, a chocolate color. This change in color is caused by pigment matter which is accumulated in the vascular apparatus of the gland. The larger part of the pigment is found in the capillary network of the portal and hepatic veins, but it is also found, in most cases, in the branches of the hepatic artery. The hepatic cells are said, by Frerichs, to remain exempt, he having in no case, observed any pigment in them, as has been asserted by Virchow. It is stated, however, in a note, that, after extravasations of blood into the hepatic parenchyma, deposits of red, brown, and black pigment in the cells are not unfrequently met with. In one case of cirrhosis he met with extensive masses of this nature. The cells were found either normal, or filled with brown bile; or sometimes infiltrated with oil, and occasionally, but only after a long continuance of the disease, they contained colloid or lardaceous matter.

In acute cases the size of the organ is either normal or enlarged; at later periods it diminishes in volume and undergoes a true atrophy, unless it have been infiltrated with colloid matter a condition which was met with only in rare instances.

The spleen undergoes similar changes. It is dark brown, or sometimes bluish-black, and its parenchyma contains large quantities of the same pigment as that found in the liver. In acute cases it is enlarged, softened, and congested. In less severe cases its volume is not much changed, unless, as seldom happens, it undergoes lardaceous degeneration, in which case its volume and consistence are considerably augmented.

The brain also exhibits the pigmentary deposits. The cortical substance assumes a chocolate or black-lead like hue, whilst the white matter remains unchanged, unless the amount of pigment be excessive, in which event the white matter presents a gray appearance, and its fine vessels resemble brown streaks. Under these circumstances microscopic examination shows the capillaries to be filled with black granules and scales.

The kidneys frequently participate in these changes. The cortical substance shows gray spots, and dark lines may be seen in the pyramids following the course of the bloodvessels. The microscope exhibits pigment matter in the capillaries of the cortical substance, and particularly in the Malpighian bodies, and sometimes isolated fragments are found in the uriniferous tubes.

The pigment is also found in the capillaries of the lungs. Dr. Frerichs says it is difficult to distinguish, in older persons, between the pigmentary deposits of another nature found in the lungs and those caused by malerial disease.

The pigment matter is found in abundance in the blood, and particularly in that of the portal vein, and is thence conveyed to the different tissues and organs in which it is discovered. The usual form is that of small, rounded, or angular granules, which are sometimes isolated, or more frequently connected together in groups by a pale substance, soluble in acetic acid and caustic alkalies. True pigment cells are observed along with the granules and granular masses, though in somewhat smaller quantity. They resemble in size and form the colorless corpuscles of the blood, or they consist of larger spindle or club-shaped cells and rounded nuclei, with sharply-defined walls. These cells contain a greater or smaller number of black granules. The color of the pigment is usually deep black, more rarely brown or orchre-colored, and, least frequently of all, reddish yellow.

It is thought by most observers that this pigment matter is formed in the spleen. Dr. Frerichs is of opinion that, though there are many reasons for such a belief, there is no proof that it may not be formed in other portions of the vascular system.

He believes, however, that there is no doubt the larger portion of the pigment is formed in the spleen.

In malarial disease, particularly, there is every reason to suppose that the spleen is the principal seat of formation of the pigment. During the congestions of that organ, which so constantly occur in this disease, the stagnation of the blood in the venous sinuses gives rise to changes which result in the formation of pigment in the masses of stagnant blood. Frerichs supposes that the club and spindle-shaped pigment cells are the epithelium of the lining membrane of the sinuses infiltrated with the decomposed red matter of the blood, that the globular pigment cells are colorless blood corpuscles infiltrated with molecules of coloring matter, and that the pigment scales are the broken-up fragments of the coagulum.

The results of these changes of the blood in the spleen are admirably drawn. One of the first effects is the production of chlorosis or anæmia, by the destruction of the red corpuscles, and no one who has seen the rapid advance of pallor in a case of unchecked or obstinate malarial disease can fail to be pleased with so admirable an exposition of the mode of production of the phenomenon. The pigment, carried by the spleen to the portal vein, and thence to the liver, is, in part, arrested in the capillaries of that organ, whilst other portions, consisting of the smaller granules and cells, pass on through the liver to the general circulation, and so reach the lungs, brain, and kidneys.

It is this retention of the pigment matter in the capillaries of the different organs by which Dr. Frerichs explains many of the symptoms which accompany certain of the severer forms of the disease. Thus, the retention of the coarser fragments in the capillaries of the liver, by clogging those vessels, gives rise to stasis of blood in the venous radicals of the portal vein. This stasis explains the intestinal hemorrhages and the diarrhœas which so frequently attend the more violent cases of bilious fever. In other instances, in addition to the effusions taking place from the mucous membrane of the alimentary canal, we have serous effusion into the peritoneal sac, occasioning ascites, a result similar in cause and symptoms to the ascites caused by cirrhosis.

The cerebral phenomena, the stupor, delirium, convulsions, or paralysis, which sometimes occur in miasmatic fever cannot, according to our author, be so satisfactorily shown to depend on the retention of pigment in the capillaries of the brain, as the intestinal hemorrhages, diarrhœa, and ascites, have been shown to be the result of hipatic obstruction, but that a con-

nection between the two does really exist, at least in some degree, can scarcely be doubted.

In many severe cases, it was found that the albuminuria and general dropsy present during life, evidently resulted from the obstruction to the renal circulation occasioned by the retention of pigment in the capillaries of the kidneys, and particularly in the Malpighian bodies.

Frerichs states that, considering the great frequency of intermittent fevers, the cases in which there is a marked development of pigment are comparatively rare; hence, in such cases other agencies, of which we possess no accurate information, must co-operate with the usual causes of intermittent fever. In the present defective state of our knowledge as to the nature of infectious diseases, it cannot be determined whether a particular quality, or an unusual intensity of miasm, is necessary for the purpose."—The cases which he has observed and published occurred after an inundation in Selesia, resulting from an overflow of the Oder, in 1854. Since that period cases of this kind have been very seldom observed, although the ordinary forms of intermittent fever are never absent. He remarks that a perfectly acurate diagnosis can only be made by direct examination of the blood. A few drops carefully collected are sufficient to show the presence or absence of large quantities of pigment. He usually collects it by means of a cupping-glass, care being taken to prevent the admixture of foreign matter.

The four cases given above are all well-marked examples of the disease, the pathological results of which Dr. Frerichs describes so well. The first case is one of simple intermittent, arising in one of the higher latitudes subject to marsh miasm, a form easily overcome by proper treatment in the early stage, and yet, even in this case, owing to its being allowed to run on unchecked for some weeks, we found in the blood of the patient, taken from the finger, the peculiar pigment granules described by Frerichs.

The other three cases were of a very different type. Originating in one of the lower latitudes, they exhibit a severity which gives us the opportunity of observing the serious consequences resulting from a dose of marsh miasm of the most poisonous kind. One of the three, though very ill when he reached the hospital, was saved by proper treatment. One was removed from the hospital in a condition which precluded all reasonable hope of his recovery. The third died. This case presented all the severest effects which result from the action of

the malarial poison on the human economy; periodical fever, rapid loss of strength and flesh, with sudden production of anæmia, and, somewhat later, diarrhœa, ascites, anasarca, in connection with albuminous urine, general cachexia, and death. With Dr. Frerichs's work before us it is easy to understand the successive steps of these changes. The congestion and stagnation of blood in the spleen explain, by the actual destruction of the red globules, the speedy induction of anæmia. This condition is also greatly favored, in all probability, by the failure of the globule-making function of the gland. As the destruction of the globules proceeds, their red matter is converted into pigment, which pigment, in its various forms, is carried into the vascular apparatus of the body. Deposited in the liver it may accumulate to such an extent finally as to impede the portal circulation and give rise to diarrhœa and ascites. Lodged in the vessels of the kidneys, and especially in the Malpighian bodies, it may cause a like impediment in those organs, and there is developed a true albuminuria with its consequent anasarca. In the third case given above we had all these conditions. Pigment in the liver, with diarrhœa and ascites. Pigment in the kidneys, with albuminous urine and anasarca.

The lessons as to treatment to be drawn from these discoveries are simple. The beneficent action of cinchona can scarcely be raised higher than before, but its precise mode of action is more clearly developed. Its antiperiodic power is that which makes it invaluable. By cutting off the paroxysms it prevents the repeated congestions and stagnations of blood in the spleen, and thus arrests the destruction of the blood in that organ, and the consequent production of pigment, which is the obstructive agent carried into the more distant organs of the body. The one most valuable therapeutic law taught by these facts is the necessity of applying the saving agent early in the case. When so used it averts the disastrous effects of repeated paroxysms, and thus saves life as clearly and distinctly as does a surgical operation in a case where no other course of procedure is possible. Reason deduces this result as plainly in the former case as the eye beholds it in the latter.—*Am. Jour. Med. Sciences.*

A NEW medical school is announced at Cairo, Ill., by Dr. Jos. N. M'Dowell, late of the Missouri Medical College, and Dr. C. W. Dunning, both of whom will be professors in the new school.—*Boston Med. & Surg. Jour.*

ON THE USE OF CHLOROFORM AS AN INTERNAL REMEDY.

By A. P. MERRILL, M.D.

Since the publication of my *Lectures on Fever*, in which I have made frequent reference to the use of chloroform internally, I have received numerous inquiries upon the subject, which can best be answered, perhaps, by publishing more in detail some of the cases in which I have employed the remedy.

When it comes to be acknowledged, as I have little doubt it will be, that certain ailments commonly called blood diseases, are to be promptly relieved by a remedy which is supposed to act specifically upon the nervous system, there may be reason for revising some of the favorite doctrines of modern teachers. And when vascular engorgements are found to be more under control of neurotic remedies than the lancet, it will afford pathologists an apology for reconsidering certain dogmas hitherto well received. We may even venture to hope, that after the proper effects of chloroform are ascertained, better discriminations will be made in certain diseases between cause and effect. Fever, local congestion, and other forms of disease affecting the circulation of the blood, secretion, absorption, and nutrition may be traced to causes acting primarily upon the nervous system, the changes resulting to fluids and solids taking their places in the category of secondary effects.

But the true value of chloroform as an internal remedy, and the changes in theory and practice to be effected by its use, must be determined by more extended observations. I have witnessed its remedial effects in a sufficient number of cases to justify me in laying the subject before the profession, and with the hope that it may become the instrument of important improvements in therapeutics. It may not be too extravagant to expect the most beneficial effects from it in the inceptive stage of all forms of congestion from any cause whatever. When arising from the influence of local irritants, as in gastric engorgement, worms, teething, &c., it must, of course, be expected that the relief obtained will not be permanent without the removal of the cause. But there is good reason to believe that, even in such cases, general convulsions and cerebral congestion may be suspended by full doses of chloroform, affording time and opportunity for the action of other remedies, and without which temporary relief death would be inevitable.

Such is the power of chloroform, when taken into the stom-

ach, over every kind of convulsive movement, and such the certainty of relief to every form of congestion, that it would appear reasonable to infer that there is a necessary connection between the two, placing them in the relation of effect and cause. It is difficult to understand, otherwise, why in one case congestion should be relieved by the remedy, and why in another the same treatment should relieve, equally, the convulsive movement depending upon local irritation.

Objection is sometimes made to the introduction of unmixed chloroform into the stomach, on account of its highly excitant quality. But experiment proves it to be much less stimulating to the mucous membrane than to the skin, and in no case have I observed anything more than very temporary effects upon the mouth and throat, which soon subside. The vehicles we are advised to employ in its administration can only hold the remedy in temporary suspension, and in most of the cases requiring large doses, it is quite impossible for the patient to swallow them. Sometimes a single drop falling into the folds of the neck will cause vesication, while a fluid-drachm passing into the stomach gives only a slight inconvenience by its stimulation of the mouth and throat. In the case of a child, five weeks old, to whom I gave from one to three drops mixed in breast-milk, several times a day for five successive days, the tongue became red and a little swollen, and there was at times some difficulty in swallowing, but these troubles soon disappeared when the medicine was suspended.

As in the administration of other remedies, the dose of chloroform must be varied according to the nature of the case, and more than with most other remedies may be the range of quantities given. I have administered it in doses of a single drop to two fluid-drachms, and have sometimes repeated it at short intervals; and I have reason to believe that the cases of infantile convulsions in which I have given from one-half to a full drachm, might have been relieved in the inception of the disease by fifteen or twenty drops. But when convulsions have continued for an hour or more, the smaller doses will have no perceptible effect. Indeed, relief in such cases is obtained only by such quantity as will produce sleep. As long as the eyes continue wide open there is only partial success, but when the eyelids close it may be considered evidence that the system is well under the influence of the remedy; and it sometimes happens that a considerable part of the dose is eructated, in the form of vapor, while the patient sleeps. The sleep continues from one to four hours, and is sometimes followed by great

restlessness and jactitation for an hour or more, when the patient is at ease again and sleep returns.

Case I. In the summer of 1852, I met a man on the street, in Memphis, in search of a physician for his child, who, he said, was suffering with a convulsion. I took him into my cab, and drove with him about a mile, where we found a little girl, about three years old, in a violent and general convulsion, which some of the bystanders thought had continued, with little abatement, for three hours, but the parents of the child estimated the time at less than two hours. Her jaws were clinched, and there was foaming at the mouth. Believing the case quite desperate, I requested the attendant to seize and elevate the lips, into which I gradually poured a full teaspoonful of chloroform. It was some time in reaching the throat, but as it did so the child swallowed several times, and I felt assured the whole had reached the stomach. In about five minutes the fingers and toes were relaxed, and in a short time afterwards all the spasms ceased, the eyes were closed, and some of the attendants pronounced the child dead. The pulse, which had been until now wanting, slowly returned, and I sat by her for more than an hour watching the result, when the child opened her eyes and, looking round the room with surprise at the number of persons present, called her mother and said, "give me some bread and butter." I prescribed calomel, and for several days small doses of quinia, and she recovered.

Case II. The same season, I observed a crowd of men and boys in the street, and upon inquiring the cause, was told a man was dying of sunstroke. With some difficulty, I found my way to him, and found a strong, athletic laborer lying insensible, foaming at the mouth, with stertorous breathing, cold feet and hands, eyes open, pupils dilated, and slow, feeble pulse. Having caused him to be turned upon his back, and wiped away the froth from his mouth, I poured from a vial into his clinched teeth a teaspoonful or more of clear chloroform, which, after some delay, he swallowed. The relief afforded was soon perceptible, and in half an hour he was so far recovered as to bear removal to a hospital, where he remained for several days and was then discharged, cured.

Case III. Mrs. S., an elderly lady, very fat and plethoric, sent for me to prescribe for her in "a fit of cramp colic." She had been subject to such attacks for many years, but had always found relief in the use of her own remedies, without medical aid. This attack had been more severe and longer continued than usual, and she had become alarmed. She was

writhing with pain at the pit of the stomach, upon which she pressed violently with her hands. Her extremities were cold and purple, pulse barely perceptible, and eyes bloodshot. She had taken largely of laudanum, camphor, peppermint, and brandy, all which she believed had been vomited up. Sinapisms and hot footbaths had also been tried, and several active enemata. I gave her a teaspoonful of chloroform, which, giving only partial relief, was followed in half an hour by as much more. In a few minutes after the latter dose, she complained of nothing but an inability to keep her eyes open, and expressed the fear that she might die of the effects of the chloroform in the impending sleep. But she soon slept in spite of herself, and awoke, at the end of five hours, quite well. Three years afterwards, she told me she had had no return of the disease.

Case IV. A man, aged about 30 years, represented to me that he was by trade a finisher, working mostly at a table, seated on a stool; that he was subject to epileptic fits, which generally attacked him while at his work, and with only a few seconds' premonition. I asked him if he would have time to take a teaspoonful from a vial after the first sign of an approaching attack. He thought he should. So I provided him with an ounce vial of chloroform and a teaspoon, directing him to keep them always on hand while working. He told me some months afterwards, that he thought he had warded off two attacks by taking each time, when threatened, a teaspoonful of chloroform, but that he had had several fits in spite of the remedy. A week or two after this conversation, his wife came running to me in great excitement, saying, "O Doctor, the medicine you gave my husband has poisoned him, and he is dying." Upon inquiry, I was satisfied that he was only asleep, and giving this assurance, she returned to him. He afterwards informed me that, having mislaid his spoon, he had, on feeling a premonition of attack, seized the vial of chloroform and drank off its contents, but he had no definite idea of the quantity taken. He had slept about five hours without convulsion, and several months afterwards had not been again attacked.

Case V. In the *Memphis Medical Recorder*, for May, 1856, vol. iv., page 375, I made the following note:—"A case of intentional poisoning, by taking six grains of strychnia, is reloted in the *St. Louis Medical Journal*, in which the patient was very promptly relieved by two doses of chloroform, a small teaspoonful each. Free emesis had, however, been previously produced by tickling the throat with a feather, which the reporter thinks could not have done much good, as the poison had

already, and for a considerable length of time, produced its characteristic effects upon the nervous and muscular systems. The same journal contains a suggestion, that chloroform is an antidote to lead-poisoning, in still smaller doses; but should there be good reason to expect antidotal effects in either case, we might venture to make a more sure use of them by increasing the quantity given, particularly in urgent cases."

In the succeeding number of the *Recorder*, I reported the following case:—

"We had an opportunity, recently, to test the power of chloroform as an antidote to the toxical effects of strychnia, in a patient who had taken an overdose of the latter, which had been prescribed for diarrhœa. From all accounts, the dose could not have been a large one, but there may have been cumulative influences from previous use. At any rate, the spasmodic action was violent, general, and long-continued. A teaspoonful of chloroform was introduced into the mouth with difficulty, through the clinched teeth, which caused, in a few, minutes a perceptible degree of relaxation, accompanied by sensation of chloroform vapor from the stomach; but the spasmodic action continuing in the limbs, a second spoonful was administered, and in a few minutes afterward the patient was fully and permanently relieved."

This patient, as we now remember the case, was a girl about five years of age.

Case VI. A daughter of Mr. C., of Memphis, aged about two years, was taken with a convulsion, while riding in a little hand-carriage, supposed effect of a chill, although the child had not had chills previously. When I arrived, her mother and others thought the fit had continued two hours. She had been several times in a hot bath, sinapisms had been extensively applied, and a physician was administering chloroform by inhalation, without effect. The pulse was barely perceptible, the eyes open and bloodshot, pupils dilated, skin of a purple color, jaws clinched, fingers and toes tightly drawn inward, and the whole frame severely convulsed. I administered a teaspoonful of chloroform by the mouth, the physician present admonishing me of the probable violence to the mucous membrane and of her inability to swallow, and a few minutes afterward as much more was given by enema. Very soon she was quite relieved of all spasmodic action and in a sound sleep. A dose of calomel at night, and quinia for several successive mornings, completed the cure.

Case VII. A child of Mr. M., in October, 1863, had a severe

paroxysm of fever. The next day, while laboring under what appeared to be a slight chill, I prescribed for it. In half an hour afterwards, the child was seized by a convulsion, which had continued about half an hour when I returned to it. I gave at once half a teaspoonful of chloroform, and in about ten minutes the child was relieved of all spasms and in a sound sleep. While thus sleeping, the stomach and small intestines were distended with gas, attended by considerable rumbling, all which was partially relieved in about half an hour, by free eructations of chloroform vapor. With the usual quinia treatment the child was soon well. It was about eighteen months old.

Case VIII. In 1854, Mr. S. was seized with a severe chill, which, when I arrived, had continued about one hour. I found him covered with blankets and surrounded by hot bricks, drinking hot brandy toddy. He complained of pain in the head, was very restless, and groaned with internal distress. His eyes were red, his pulse depressed, and he had had two watery stools. I gave him a large teaspoonful of chloroform, removing at the same time all hot applications, and suspending the brandy. The chill soon subsided, and only slight febrile reaction followed.

Case IX. Mr. M., of New York, was taken with a chill soon after rising in the morning. I found him by a large fire, shivering, restless, and complaining of pain in the head, back and limbs. I gave him a teaspoonful of chloroform, and got him undressed and in bed. He was then only partially relieved, and the dose of chloroform was repeated. This relieved the chilly sensations, but he still had headache. Soon afterward he slept for an hour and awoke much better. Only slight febrile action followed. Quinia and arsenic were given and a recurrence of the chill prevented.

Case X. A gentleman upwards of sixty years of age, long resident in a malarial region, had suffered frequent attacks of intermittent fever, and had used quinia until it seemed to have lost its effect upon him. Latterly his chills were obscure, and attended by partial blindness. I advised chloroform in doses of half a teaspoonful in the inception of his attacks. This always gave relief, and finally overcame the tendency to disease without any other remedy.

Case XI. A young married woman about six weeks pregnant suffered with distressing attacks of asthma. Full doses of chloroform invariably gave relief.

Case XII. One of the most remarkable of all the cases noted is that of Laura Bateman. This little girl, $5\frac{1}{2}$ years old, had been salivated to such an extent as to cause the loss of consid-

crable portions of the alveolar processes of the lower jaw, and her neck was scarred with scrofulous ulcers. She was taken with a convulsion on leaving the street cars with her mother on Sixth Avenue at 27th Street, and brought thence in a carriage to Leroy Street. On my arrival she had been uninterruptedly convulsed, as stated by her parents, full two hours—subsequently they estimated the time at three hours. The convulsive movement was very general, affecting the limbs, the fingers and toes, the muscles of the face and neck, the eyes, &c. Her hands were cold, but her feet were immersed in a hot mustard bath. No pulse could be felt at the wrist, the face, and especially the forehead, was dark with capillary congestion; the eyes were bloodshot and wide open, with dilated pupils; her breathing was labored and stertorous; her jaws clinched, and she foamed freely at the mouth. She had evinced no sign of consciousness, had swallowed nothing, and had no other remedy than the mustard foot-bath. I poured full half a drachm of chloroform within her lips, which were elevated to receive it. It found its way slowly through the teeth, and was, with a convulsive effort, swallowed without any loss. In one minute all the convulsive movements were lessened, and remarked by the attendants. Still there remained considerable spasmodic action, and the eyes were unaffected. The dose of chloroform was repeated in few a minutes, and almost instantly her eyes were closed, and no spasm remained, except that her arms were straightened and rigid. As she slept, however, I did not repeat the remedy. Her pulse was now considerably excited, but soon after became slower and more regular, and I left her. The next day she showed little evidence of the fearful attack, except that one-half of one eye was still suffused.

On the thirty-fifth day afterwards, at the same hour, this child had another attack of the same kind. The convulsions had continued exactly two hours when I saw her, and she seemed more prostrate than in the previous attack. Besides being pulseless, and showing signs of extensive congestion, the pupils were more dilated, and there was rattling in the throat. The whole aspect of the case, indeed, impressed me with the belief that death was impending and inevitable. I gave her a full teaspoonful of chloroform, which was swallowed with some difficulty. Very little abatement of the symptoms followed, and the eyes remained open, with violent convulsive movements of the eyeballs. After waiting twelve minutes, a half teaspoonful more of chloroform was given, and immediately the eyes were closed and the convulsions ceased. Still there was much rat-

tling in the throat, the pulse was only perceptible, and her breathing so difficult at times that it seemed necessary to change her position to facilitate the entrance of air into the lungs. All these matters gradually improved, however, and in an hour and a half I left her in a quiet sleep. With the usual quinia treatment she recovered, but somewhat more slowly than before.

Case XIII. In June, 1865, I was called, casually, to see a middle-aged lady said to be suffering with convulsions. I found her lying on the floor partially convulsed, her teeth clinched, insensible, eyes open, pupils dilated, convulsive twitchings about the face, groaning, and with both hands pressing firmly upon the epigastrium. She was very corpulent, with short neck and protuberant abdomen. I introduced into her mouth, with some difficulty, half a teaspoonful of chloroform, by which she was partially relieved and quieted, but remained insensible and speechless. Ten minutes afterwards the dose was repeated, and in a few minutes she came to herself and said she was much relieved. She represented the attack as having been preceded by sensations of chilliness and fulness of the head, especially the occiput, but that she did not consider herself much indisposed. She had suffered in the same way several times before, and on one occasion relief was obtained only after five or six hours.

These few cases, taken pretty much at random from my practice in Memphis and New York, will serve to give those who have not tried it some idea of the power of chloroform over certain abnormal conditions of the nervous system; and, perhaps, the publication of them may induce other physicians to give more attention to the subject than they otherwise would have done, in which case my object will have been answered. The largest benefits are likely to result in cases of chill, enabling us, possibly, to overcome by this means the incipient stage of fever, even in its most fatal and epidemic forms; for, if the position taken in my published lectures be the correct one, in regard to the gradual accession of all forms of idiopathic fever, it may be hoped that a remedy, which so completely controls it in the cold stage, can be so used as to very much lessen if not prevent its necessary fatality.

I have not had proper opportunities for testing the efficacy of chloroform internally in cases of poisoning by strychnia, opium, and other articles which are supposed to act by causing congestion in the brain, spinal cord, ganglions and plexuses, but its effect upon congestion induced by the cause of fever is such as to justify the expectation that it will be found

useful in these cases also. In gastric and uterine congestion, dysmenorrhœa and puerperal convulsions, I have reason to believe the remedy scarcely less efficient than in the cold stage of fever. And we may hope for good results from its use in apoplexy and paralysis. It should be at once popularized as a remedy for infantile convulsions and sunstroke, which often prove fatal before medical aid can be provided, and also in cases of gastric congestion from the use of cold water when the system is heated by exercise; and certainly no restraint should be imposed upon the sale of chloroform in small quantities by druggists.—*Am. Jour. Med. Sciences.*

ANÆMIA AND ANÆMIAC PALPITATION.—PHYSIOLOGY OF THE BLOOD—ABSTRACTS AND COMMENTS.

By DAVID WOOSTER, M.D., ETC.

Anæmia has been long known to be associated with palpitation of the heart, but precisely how it is the cause of palpitation, is not clearly understood. Properly speaking, there is but one cause of palpitation, and that is lesion, either functional or organic, of the pneumogastric nerve, which is the acknowledged regulator of the heart's rythmical motion. Anæmia, to affect the heart's rythm, must first affect the pneumogastric nerve, and hence the study of palpitations becomes a study of innervation or ganglionic nutrition, and this leads us directly to the investigation of the physiology of the blood itself. Anæmia is by no means a word expressing a definite pathological condition. For example: the blood is composed of red and white globules and of plasma; the plasma consists of fibrine and serum; the serum, of albumen, certain salts and water. By anæmia we surely do not mean a deficiency, or lack even, of all these substances; for, on the contrary, in the disease recognized as anæmia there may be merely diminution of red globules—this would constitute *globulia* only; there may be lack of albumen, which would constitute an *albumenæmia*—and so with all the constituents which go to make up that heterogeneous current of evil and good we call blood. It will be remembered, blood is not merely material of which organs are to be made and repaired: it contains not merely living, but also dead matter. In its purple current are mingled the products of destructive metamorphosis and the elements which are to repair this destruction and

waste. The employment of a concrete term to express several discrete facts is not scientific.

When the mass of the blood is considerably or repeatedly diminished, when the globules are relatively or absolutely diminished, when the watery part of the plasma becomes excessive, when the albumen of the serum falls below its physiological limit, there occur a set of symptoms which we call anæmia. In this sense, chemically and histologically, anæmia is total, globular, albuminous or hydremic; defect of albumen rarely exists alone; it is followed by consequences at once peculiar and dangerous. The excess of water in the blood is almost always long subsequent to the diminution of globules; it is a very advanced stage of general anæmia. The first pathological condition in anæmia is defect of globules only.

The causes of anæmia exist not in the blood itself, but are various as the means by which the equilibrium of the principles of the blood is maintained; as various as the histo-chemical elements employed in its genesis: as various as the organs or tissues which preside over the formation, destruction, and regeneration of the plastic or globular elements.—(LEE.)

The blood neither lives nor changes itself. There is no such thing as a blood disease. It is merely a secondary alteration, depending on some lesion of nutrition or assimilation. The disease we call anæmia is an affection in which the whole organism takes an active part, either through the generic influence of the organs upon the composition of the blood, or through the changes which the altered blood in its turn impresses on the various functions.

As we said above, the blood is not an independent thing—it gives and receives despite itself. The organs and tissues, as Claude Bernard has shown, appropriate by elective affinities the principles of the blood. The blood does not contain all the substances found in the secretions or in the parenchyma of organs; neither gastric juice, bile, nor the genital secretion is found in the blood. The blood furnishes merely the primitive materials; the organ elaborates and modifies them according to its peculiar function. The organ is active, the blood passive. The latter receives indiscriminately, and restores in the same manner, the products of nutritive metamorphosis, and generally in the most simple forms. Of all the elements composing the blood, but one presents a true autonomy: this is the globule.—(VIRCHOW.) The physiologist recognizes in the blood only two essential parts: the globules and interglobular liquid, or plasma.

Plasma deprived of globules and fibrine constitutes serum—

contains, 1st. Albuminous substances (which can only become cause of disease by diminishing so as to alter the physical fitness of the blood.—(C. BERNARD.) 2d. Products of protein bodies. 3d. Flats; and finally, inorganic matter and salts and water.

The red and white globules are the only elements of the blood endowed with vitality. The globules have been compared to living cells: they live, perform their function, and die in the midst of the plasma. However intimate the relation between the plasma and the globules, they possess properties altogether distinct. The plasmic elements may pass into the secretions and tissues; in fact, the entire plasma, except the fibrine, may, under special conditions, become infiltrated into the surrounding tissues; but a globule never passes through the walls of the capilliaries in its physiological condition. Bischof says the transfusion of plasma without globules is exceedingly dangerous, and, in any considerable quantity, fatal, whereas the transfusion of globules without fibrine (C. Bernard says) will often restore life to the really dead. The globules are clearly indispensable to the functions of the organs. They are the vital elements of the blood just as cells are of the tissues.

Schwan says the globule has an envelop, a viscous and colored contained substance, and a nucleus. The nucleus is now given up and acknowledged to be an illusion. Schultze denies the envelop, and says the appearance is the result of greater density of the globule at its periphery. The nucleus is only a depression in the bi-concave disc, indicated by a semi-circular shadow and clear space, this dark depression has given rise to the belief in the existence of a central nucleus. Bruelke says the globules have no envelop: that it does not follow because they lose their discoid form in water and become spheroidal, that therefore they have a special membrane. A nucleus is not necessary to the existence of cell; the function of the nucleus is important during the division of the cells and endogenous formations, but its intervention may be omitted and the division proceed directly from the *protoplasma*, which penetrates both the nuclear mass and the fragment.

Schultze denominates *protoplasma*, that substance in which the nuclei repose, including the nuclei. Thus the mass in which repose the nuclei of striated muscular fibres, may be considered the protoplasma of cells, although this matter may be merely finely dotted, and not separated by any membrane from the morphosis of the protoplasma of the contractile muscular substance. Connective tissue is developed in the same manner at the expense

of the protoplasma. The intercellular substance of this tissue does nor result from division or budding of another cell; but it is the product of a continual metamorphosis of the protoplasma of those cells which are in process of growth. The moment the protoplasma loses its vitality it becomes an inert substance soluble in water, and this condition is recognizable by the absence or decrease of nuclei. A blood globule which has no apparent nucleus (depression) is a dead globule, no longer fit for purposes of nutrition. This is the theory of Schultze, but Bruelke says the nucleus itself is *not* indispensable to the constitution of the cell and its reproduction, as remarked above. He says the protoplasma itself possesses the property of contractility. This contractility is visible under three forms in the organism. 1st. Contractility in the striped muscles, that is, in their protoplasm. There is another species of contractile substance found only in inferior organisms—the infusoriæ, known as *amibes*, seem to be composed entirely of this contractile substance, which is called *sarcode* (flesh like), and which coagulates at 80° F. Kuhne found this substance in the cornæ of frogs, and in pigmentary cells. A third species of contractile movements is found in the vibratile ciliæ, which line the respiratory organs and the inter nal genital organs of woman. Then there is a molecular movement in the protoplasm of a multitude of cells entirely distinct from muscular fibro-cells. Virchow observed this motion in white globules, Recklinghausen in purulent and mucous globules which are able, by progessive movements, to reach the surface of the membranes.

This is quite distinct from molecular displacements, and is entirely suspended on the death of the cell. If an inductive current be made to pass through these cells the molecular movement ceases, the cells suddenly collapse, exhibiting only nuclei, contraction seems then to depend upon vital manifestation.

The real texture of the red globule may be considered as settled beyond cavil. It is not a vesicle composed of a special membrane. It is composed of a substance which is extensible, very elastic, susceptible of assuming almost any shape under external forces, and of resuming its original discoid form when the force is removed. This is proved by the experiment of Rollet with a concentrated solution of gelatine; in which globules had been artificially brought together; gelatine so charged is partially dried and submitted to pressure under the microscope, when the globules are seen to assume all forms, and even to rupture and disappear on being distended with the solution; but in no case is a collapsed membrane seen, nor any contents ever seen to escape from a vesicle.

Congelation of the globules repeats these phenomena; the depressed portion or nucleus of the globule remains visible longer than the surrounding portion. Static electricity acts like congelation: the globules are for the most part destroyed, and in the blood of some animals hematine crystals are deposited at the same time. Ether produces analogous results: the blood grows clear, the globules smaller and they disappear without rupture.

Finally, it has been demonstrated by Bruelke, Rollet, and more recently by Klebs and Alex. Schmidt, that red globules are contractile bodies, whose contractility may last some hours after death, and that this contractility depends solely upon the *protoplasma*.—(Lee.) All this exactness of research on the physiology of the blood has much to do with the exact diagnosis of disease, and with the simplification of nosology. It will be manifest that treatment must in the main be nutritive—histochemically speaking—and that waste is quite as essential as reparation; or in other words, morphosis and metamorphosis must be equally active.

I am of the opinion that if we study farther we shall find globular lesions to occupy a much more extended range in the production of disease, than has hitherto been attributed to them. Anæmia is a generic term, including many morbid changes, as well as being the exponeat of a well-recognized state of the organism. But it must be borne in mind that the lesion of the globule is not primary, and indeed can hardly be conceived to originate in the globule itself. The altered globules will die—let them, they cannot be restored; but treatment can induce the organism to replace them with normal globules, and to increase the number of the latter, and this will in turn restore the altered functions, and the latter will in turn assist the re-formation of the defective blood. Nothing is more detrimental to the integrity of the blood than continued pain, or mental or moral disturbance; a quite mind in a body free from pain is the best restorative of the blood; and producing and maintaining this condition is the most speedy way to cure *anæmia* and anæmiac palpitations.—*Pacific Med. & Surg. Jour.*

SEWERS AND THEIR EVILS.

The immense extent of the London system of sewerage probably converts the sewers into one enormous cesspool. It was, of course, the decomposition of the animal excrements which

gave rise to the dangerous vapors issuing from the cesspools. Now, if these excrements are allowed, in consequence of the length of the sewers through which they now have to pass, to decompose, as they decomposed in the ancient cesspools, why should not the vapors and gases arising from the decomposition in the sewers produce as noxious effects as they produced when they escaped from the cesspools? We, some years ago, suggested this question, Whether our present system of sewage would not become one enormous cesspool; and whether some special provision ought not to be made for the escape, by high shafts, or neutralization of the products of decomposition? If it be true that the contents of our sewers in London undergo decomposition just as they underwent decomposition in the old cesspools, surely it was something akin to madness to set loose all the products of the decomposition at our very doors and under our very noses. But all this matter rexuires investigation; and interesting would it be, if we could get some sure information as to the ordinary health of those men who pass many hours in these sewers, and whom we occasionally see emerging from iron traps, with lantern and heavy jack-boots. What effect does the inhaling of the vapors of sewers have upon them? Perhaps some of our readers can tell us something of this; and we may add, that we wish Dr. Fuller had furnished the *Times* with some positive proof that the issue of gases from sewers had injured human constitutions and produced diseases.

Dr. Miller, Professor of Chemistry in King's College, says truly enough, that sewers must be ventilated—*i. e.* the gases must be let out of them—so long as it is necessary for men to pass through them; and he recommends the process of ventilation and disinfection proposed by Dr. Stenhouse.

It consists in suspending charcoal in the ventilating openings. In London, the plan has been carried out by the engineer to the Commissioners of Sewers, with the sanction of Dr. Letheby, and both these gentlemen have reported strongly in its favor. There is placed in each ventilating opening a box, within which are three or four perforated shelves, and on each side of these shelves is a layer of wood charcoal; openings are made at the top and bottom of the box, to allow the free passage of the air; the whole of the air which escapes from the sewer is obliged to pass through the box and over the charcoal before it reaches the outer atmosphere. The offensive and noxious gases are speedily absorbed by the charcoal, and are oxidized within its pores, by which means they are converted into a harmless substance, destitute of odor. "The method is so simple and effect-

ual," says Dr. Miller, "that it ought at once to be put in practice, while yet there is time." * * * *

Dr. Herbert Barker, who has proved himself to be a high authority on the subject of disinfection, speaks of ozone as being "Nature's grand atmospheric disinfectant." His observations are of much interest, and the practical conclusions recommended worthy of consideration, especially in reference to this matter of the cholera. We conclude that Dr. Barker has satisfactory proofs of the fact that ozone is really absent in the district where cholera rages, &c. Of course, the full establishment of this fact is very important.

"In the neighborhood of cesspools, all evidence of the presence of ordinary atmospheric ozone is lost. When ozone is abundant in the air, it may be detected on the windward side of a stable, or cowshed, or manure-heap, but not on the leeward side. It may be observed abundantly immediately on the windward side of a town, and not a trace of it discovered at the same time on the leeward side. The ozone test paper, in an ill-ventilated church, when full of persons, will give no reaction. I have evidence from my own experience that the diffusion of ozonized air through the apartments of persons suffering from fevers, is of immense service, in that it keeps the room free of oppression, and effectually destroys the offensive odors arising from the gaseous excreta of the subject. Ozone, in its action as a deodorizer, closely resembles chlorine. It can be employed permanently by a single process with ventilation. Ozone may be prepared by Siemen's cylinder, the air driven through the cylinder being ozonized by sparks from Ruhmkorf's coil. This method can be adopted only in hospitals, as skilled hands are required for its management. Fortunately, we have a means of generating ozone from phosphorus, which is ready for use at any moment, and with little trouble. Two sticks of phosphorus, each two inches in length, made very clean by scraping, if covered with oxide, and half covered with water, will yield in an hour sufficient ozone, in a room of 3,000 cubic feet, to be detectable by Schönbein's test in every part, and this even when there is good ventilation. The objection to the production of ozone, that there is not a sufficient bulk of water to absorb the fumes of phosphoric acid, may be obviated by using a vessel containing a larger quantity of water, and by floating the phosphorus at the proper depth upon its surface. The degree of evolution of ozone may be tested by a slip of Schönbein's paper. It is very remarkable that, during the prevalence of cholera in any district, ozone has been observed to be absent

in that district; not the smallest trace has been discoverable by the test papers."—*Medical News & Library*, from *British Medical Journal.*

Book Notices.

Researches on the Medicinal Properties and Applications of Nitrous Oxide, Protoxide of Nitrogen, or Laughing Gas. By Geo. J. Ziegler, M.D., Physician to Philadelphia Hospital, &c., &c. Philadelphia: J. B. Lippincott & Co. 1865.

This is a very neatly printed little volume of 66 pages, in which the author discusses the physiological, pathological, and therapeutic properties and applications of nitrous oxide. The book is full of suggestions of an interesting character, and will abundantly repay for the time spent in perusing it, but is very deficient in facts or cases calculated to sustain and illustrate the practical application and correctness of the suggestions made. We have long entertained the opinion that the nitrous oxide gas afforded a most valuable remedy in sustaining the susceptibility of the tissues and the integrity of the blood, in the lower grades of typhoid and typhus fevers, as well as in the pernicious form of intermittents, and in cholera. But owing to the inconvenience of preparation and administration, we have never adequately tested our opinion by practical application. We hope this little work of Dr. Ziegler will so far excite the attention of the profession, as to cause the medicinal properties and value of the nitrous oxide gas to be fully tested, especially in cholera, if that disease should prevail in our country the coming spring and summer.

The work is for sale by W. B. Keen & Co., Lake Street, Chicago.

Materia Medica for the use of Students. By John B. Biddle, M.D., Prof. of Materia Medica and General Therapeutics in the Jefferson Medical College, &c., &c. With Illustrations. Philadelphia: Lindsay & Blakiston. 1865.

This is an octavo volume, of 359 pages, on good paper, fair

type, and containing cuts illustrating many of the indigenous articles of the materia medica. It claims to be a simple review or summary of the materia medica, designed almost exclusively for the convenience of students, while attending their college courses of instruction. It is written in a clear, concise, and pleasing style, and is well adapted to the purpose had in view by the author.

For sale by S. C. Griggs & Co., Lake St., Chicago, Ill.

Stimulants and Narcotics, their Mutual Relations; with Special Researches on the Action of Alcohol, Æther, and Chloroform on the Vital Organism. By Francis E. Anstie, M.D., M.R.C.P., Assistant-Physician to Westminster Hospital, Lecturer on Materia Medica and Therapeutics to the School, and formerly Lecturer on Toxicology. Philadelphia: Lindsay & Blakiston. 1865.

This, like the preceding, is a neatly published volume, containing 414 pages. The topics discussed by the author are of the highest degree of interest and importance. But we have, at present, only time and space sufficient to announce the work. It will be noticed more fully at a future time. Meanwhile, it is for sale by S. C. Griggs & Co, Lake St., Chicago, Ill.

Specialties in Medicine. By Henry D. Noyes, M.D., Surgeon to the New York Eye and Ear Infirmary. Read before the American Ophthalmological Society, June, 1865.

This is an interesting pamphlet of 16 pages, on a topic of general interest.

Editorial.

Wm. T. G. Morton, and his Extraordinary Pretensions. —Some two or three weeks since, this gentleman appeared in our city, with letters of introduction to many members of the medical faculty of the city, and was kindly received. He visited the Mercy Hospital, he asked for and obtained the privilege of lecturing an hour to the class in the Chicago Medical College, during which he gave some familiar instructions in regard to the mode of inhaling ether, claimed for it entire safety

and superiority over all other anæsthetics, and closed with a pretended *history* of the discovery and application of anæsthesia to the relief of pain during surgical operations. In the historical part of his discourse, the omissions and perversions of facts were certainly remarkable. His sole aim seemed to be to impress his audience with the fact that Dr. W. T. G. MORTON was not only the first to discover and apply anæsthesia, but to his unremitting exertions and enormous pecuniary sacrifices, made in overcoming the opposition and prejudices of the profession, the world is at this time indebted for all the blessings derived from the use of anæsthetics. Whether he obtained an audience in the Rush Medical College or not, we do not know.

Subsequently he obtained an opportunity to address the Chicago Medical Society, at its regular Friday evening meeting. There he pursued the same course, so far as relates to the history of anæsthesia, wholly omitting some important facts, distorting others, magnifying molehills of opposition into mountains, and whatever else would tend to convey the impression that to Dr. MORTON, alone, is the world indebted for all the blessings of anæsthetics in surgery, obstetrics, and dentistry. He went back to the most remote and imperfect attempts to alleviate the pain of surgical operations by the use of opiates, inebriants, &c., not forgetting to mention the well-known remark of Sir HUMPHREY DAVY in relation to the use of nitrous oxide gas, but not a word escaped his lips by which the most attentive listener would have supposed that either HORACE WELLS or C. T. JACKSON ever lived. Now, what is the moral difference between the deliberate suppression of well-established facts in relation to any subject under public discussion, and the direct assertion of falsehoods?

But the historical part of his discourse constituted only its preface. The theme on which he dilated with the greatest enthusiasm was, the stubborn opposition, the bitter prejudices, and the unjust assaults he had to encounter from the medical profession, in his efforts to bestow upon it and the world the inestimable blessings of his great discovery, and the consequent anxiety, loss of time, destruction of business, and expenditure

of money which he was compelled to bear, in perfecting, introducing, and defending it. Of course, he did not omit to mention, as parallel cases, the honored names of HARVEY and JENNER. To add to the force of his own representations, he had loaded the table of the society with a profusion of pamphlets entitled "Proceedings in behalf of the Morton Testimonial," in which, among many other things, it is asserted over the signatures of two *millionaires* of Boston, "that Dr. MORTON has sacrificed *all his property*, and *all the profits of his profession, in introducing his discovery*, and in establishing his claim, and that he has seriously impaired his health; that he has failed to obtain compensation from the Government for the use of ether in the army and navy, and that he has no hope of any public compensation."

Finally, the conclusion of the lecture brought the pith of the whole matter, namely:—that inasmuch as he had actually sacrificed time, rest, business, money, everything of a material nature, in conferring his great boon upon the world, and after years of patient application both to the legislative and executive departments of the Government, had utterly failed to obtain any remuneration, he was now compelled to appeal from the Government to the people. He therefore clearly indicated to the society his wish that *all* its members would sign an appeal to the wealthy and benevolent citizens of Chicago to make contributions to the "Morton Testimonial," and that a committee be appointed to call a public meeting of citizens, before which Dr. MORTON should present his claims in person. To prevent any unnecessary loss of time, he very kindly and *modestly* laid upon the table an *appeal* already prepared, printed, and pasted upon a blank sheet of paper, in due form for the signa ures. To encourage the timid and give faith to the doubting, the fl ttering idea was thrown out, that their *autographs* would be so much cherished by him in future, while the medal and decorations of honor received from the Governments of France and Russia came *un*-ostentatiously into view. Of course, this printed appeal was carefully worded in such a manner as to make it a full endorsement of all Dr. MORTON'S claims, and would have

made a capital addition to the next edition of the pamphlet of "Proceedings in behalf of the Morton Testimonial."

Several members of the society signed that paper, and the committee asked for was appointed. More than two weeks have since elapsed, but we have heard nothing of the proposed public meeting. Without wasting a word on the brazen-faced impudence of all this, let us turn directly to the three important questions involved in Dr. MORTON'S pretensions:—

1st. Is he entitled to the credit of having been the first to discover and practically apply anæsthetics to the relief of pain in surgical operations?

There is no fact in human history better established, than that Dr. HORACE WELLS, of Hartford, Ct., commenced investigating the practical application of anæsthetics three years before Dr. MORTON dates his discovery with ether. He chose the nitrous oxide gas, and not only conceived the idea or principle of anæsthesia, but he clearly and successfully demonstrated its applicability, by administering it to patients with the effect of entirely preventing pain during the extraction of teeth. This is fully proved by the dentists and respectable citizens of Hartford. Having proved both its safety and efficiency in Hartford, Dr. WELLS went to Boston during the college term of 1843–4, was kindly received by Dr. J. C. WARREN, who informed the medical class that Dr. WELLS was in the college, that he claimed to have discovered an effectual method of relieving pain during surgical operations, spoke of the importance of the discovery, if it should prove true, and advised the students to see and hear what Dr. WELLS had to say.

Dr. WELLS lectured to the students and others on the subject, and performed some experiments, which excited among them much interest. During the same visit, he obtained the privilege of administering the gas to a patient in the Massachusetts General Hospital, for the purpose of having some operation performed, but through timidity, or some other cause, not enough was given to make the trial successful, and the attempt was reported a failure. Meeting with no encouragement for further trials, he left Boston, doubtless, feeling no little disap-

pointment and chagrin, and returned to Hartford, where himself and other dentists of that city continued to administer nitrous oxide gas as an anæsthetic, with entire success, during the extraction of teeth. It is just here that the professional world has been most deceived in relation to Dr. WELLS. Because he left Boston in the winter of 1843–4, after a single unsuccessful trial of his anæsthetic, he has been persistently represented by Bostonians as having abandoned the effort to use or introduce anæsthetics in surgical practice. But this representation is fully proved to have been devoid of truth, Dr. WELLS never having abandoned the practical application of nitrous oxide gas to anæsthetic purposes to the day of his death. All these facts, in relation to Dr. WELLS, were perfectly familiar to Dr. MORTON, during the years 1844–5–6; and when the latter, in the fall of 1846, went to Dr. C. T. JACKSON, for a supply of nitrous oxide gas, it was with no other thought than to carry out the identical practice of Dr. WELLS. But on being told by JACKSON that ether would produce the same insensibility to pain, and was every way more convenient and manageable, he was induced to try it, and for the first time successfully during the extraction of a tooth, on the 30th of September, 1846; and on the 10th of October, 1846, he gave it with satisfactory results to a patient in the Massachusetts General Hospital, during an operation by Dr. J. C. WARREN. Such is the actual history of anæsthesia up to October, 1846. The entire *discovery* of Dr. MORTON consisted in substituting the use of ether, on the earnest and emphatic recommendation of Dr. C. T. JACKSON, for the nitrous oxide gas of Dr. WELLS. The act of Dr. MORTON bears the same relation to the preceding acts of WELLS, that the subsequent act of Dr. SIMPSON, in using chloroform, did to the use of ether by MORTON.

2d. Did Dr. MORTON, in his efforts to introduce the use of ether as an anæsthetic to the medical profession, meet with such opposition, such incredulity, such prejudice, and such misrepresentation that it required the sacrifice of his time, fortune, business, health, &c., to enforce so great a boon upon the attention of the world?

Let the facts contained in the first report on Surgery made to the American Medical Association, and published in the first volume of the transactions of that body answer.

Dr. MORTON'S first administration of the ether in the Massachusetts General Hospital, was on the 10th of October, 1846. On the 3d of November, less than thirty days thereafter, an account of it was read by Dr. HENRY J. BIGELOW, to the American Academy of Arts and Sciences, and on the 9th, to the Boston Society for Medical Improvement, and published by the same in the *Boston Medical and Surgical Journal* for Nov. 18th, 1846. The facts were also communicated to prominent members of the profession in London and Paris. Within six weeks, it had been fully and successfully tested in London, and in three months, it was in familiar use in the Hospitals of Paris, from which its use spread so rapidly over the whole of Europe, that in less than fifteen months Prof. SIMPSON had gathered and tabulated more than 300 cases of the larger amputations alone, in which ether or chloroform had been used. The use of these anæsthetics was adopted a little less rapidly in this country than in Europe, yet, from the report already alluded to, it appears that before the 1st of April, 1848, they were in almost daily use in every public hospital in the United States, and by all the distinguished surgeons North, South, East, and West. And not only this, but they had also been administered in "more than 2000 cases of obstetrics." Thus, within the incredibly short space of eighteen months, the use of anæsthetics had been fully introduced into the practice of surgery, obstetrics, and dentistry, throughout Europe and America, and that too without requiring Dr. MORTON to travel a mile, or expend a dollar, beyond the limits of Boston.

But why was the introduction of anæsthetics more slow in this country than in Europe? Let the able report on surgery, in the first volume of Transactions of the American Medical Association answer. (*See page* 181.) "This indifference to the discovery was probably owing to several causes. One of the *most prominent* of which was the *taint of charlatanism* which attached itself to its early history, and which created a preju-

dice against it, in some minds so strong as to prevent them from giving to the subject a full investigation. This feeling against secret and patented medicines, happily, prevails in the medical profession to a great extent, it is deep-rooted and sincere, and is based upon the highest considerations of public utility; if, in this instance, it was carried too far, the motive was, at least, just and honorable, and *the fault lies more with the discoverers* (MORTON and JACKSON,) *who attempted to conceal the nature of this new agent, under the name of 'Compound Letheon,'* than with the profession." Thus it appears that, instead of opposition and prejudice on the part of the profession, the use of anæsthetics was adopted with a readiness and rapidity, both in Europe and America, unparalleled in the history of all previous remedial agents, and that whatever prejudice or neglect was exhibited towards them, was owing, mainly, to the unprofessional and quackish efforts of Dr. MORTON to conceal the nature of his anæsthetic under the false name of "Letheon," and to make all the world tributary to his pocket by a *patent right.* What disgusting misrepresentation then, for this same individual to be now perambulating the country, pretending to have sacrificed his business, his fortune, his health, and his all, in "*perfecting* and *introducing*" his great discovery to the world.

Pray what *perfecting* did it admit of, except to procure from the chemist a pure specimen of ether and strip its use of the cumbrous machinery, false names, and patents that Dr. MORTON had attempted to throw around it? The most diligent student of the history of anæsthetics will search in vain for any evidence that Dr. MORTON was ever required to abandon his legitimate professional business a single week, or spend a single dollar of his fortune beyond the cost of a few pounds of ether, in discovering, perfecting, and introducing his favorite anæsthetic to the profession and the world.

As we have already shown, his two first successful experiments were speedily described, endorsed, and heralded over both continents by eminent surgeons in Boston, and, with very few exceptions, accepted and acted upon with avidity by the profession at large. But we are confidently assured that Dr.

MORTON *did* sacrifice his business and his fortune, and undergo an immense amount of labor and anxiety, on account of his great discovery. And we have no reason to doubt the truth of the assertion.

This leads to our third and last question, namely:—For *what, and how, did he* make these great sacrifices?

To every impartial reader of history the answer is obvious. Dr. MORTON'S great primary animating idea was not the conferring of an inestimable boon upon the human race, by adding to our knowledge of the means of alleviating pain, but how to make that knowledge turn, with certainty, a pecuniary fortune into his own pockets. It was present with him before he had made his first successful demonstration, and prompted him to the dishonorable attempt to conceal the nature of his agent under the name of "Letheon." It was this that sent him in hot haste, not only to Washington for a *patent* covering all of this country, but across the ocean for one in England also. When he soon found that neither false names nor patents would enable him to control the coveted pecuniary profits, the same controlling idea constrained him to further abandon his legitimate business and squander whatever fortune was at his command in feeing eminent lawyers, and carrying out, through a protracted period, all the corrupting acts of a *lobbying* career, during the sessions of Congress, for the purpose of inducing the national legislature to endorse his pretensions, by an appropriation of a few hundred thousand dollars. All of which resulted in total failure, as was fitting and proper that it should.

If any of our readers think our remarks severe or captious, let them read the following preamble and resolutions, adopted almost unanimously, in a full meeting of the American Medical Association, held in the City of New York, in June, 1864:—

"*Whereas*, In the appropriation bill now pending in Congress, is a clause donating to Dr. W. T. G. Morton, of Boston, the sum of $200,000, as a recognition of his services in introducing sulphuric ether as an anæsthetic agent: and,

"*Whereas*, The said Dr. Morton, by suits brought against charitable medical institutions, for infringements of an alleged patent covering all anæsthetic agents, not claiming sulphuric

ether only, put the state of anæsthesia, however produced, as his invention, *has, by this act, put himself beyond the pale of an honorable profession* and of true laborers in the cause of science and humanity; therefore,

"*Resolved*, That the American Medical Association enter their protest *against any* appropriation to Dr. Morton, on the ground of his unworthy conduct, also because of his unwarrantable assumption of a patentable right in anæsthesia; and, further, because private beneficence in Boston, New York, Philadelphia, and other places has already sufficiently rewarded him for any claim which he may justly urge.

"*Resolved*, That a copy of these resolutions be forwarded to the Chairman of the Committee of Ways and Means." (*See Transactions, vol xv., p.* 53.)

Also the following, which was adopted unanimously, by the American Dental Association, during its annual session, in Niagara, in July, 1864:—

"*Resolved*, By the American Dental Association, that to Horace Wells, of Hartford, Conn., now deceased, belongs the credit and honor of the introduction of anæsthetics in the United States of America; and we firmly protest against the injustice done to the truth and memory of Horace Wells in the effort made during a series of years, and especially at the last session of Congress, to award the credit to other person or persons."

Now, when Dr. Morton will come before the profession and the world with a candid, truthful history of anæsthesia, giving to Dr. Wells, Dr. Jackson, and all others their just and proper credit, and claim for himself only just what he is fairly entitled to, namely, the credit of having by the suggestion of Dr. Jackson, substituted for the inconvenient, unportable, and bulky nitrous oxide gas used by Dr. Wells, the more convenient, portable, and manageable sulphuric ether, and so demonstrated its applicability as an anæsthetic as to, at once, command the attention of the scientific and professional world; and, at the same time, confess that all the business, money, and health he has heretofore sacrificed, has been in unsuccessful efforts, of a quackish and unprofessional character, to secure in some way the pecuniary profits of anæsthesia to himself, we will make a donation to the "Morton Testimonial," and invite all our friends to do the same. Until then, however, we must beg to be excused.

Death.—Dr. Ezra A. Steele, who was associated with us, as assistant-editor, during the first one or two years of the publication of the Medical Examiner, died at the residence of his uncle, in Marshall, Clark Co., Ill., on the 27th day of October last, aged about 30 years. We had known him intimately from his student days to the time of his death. He was a young man of more than ordinary talent, a physician of good judgment and skill, and a faithful friend. But consumption early marked him for a victim, and though he lingered long, yet, for the last four or five years of his life, he was almost wholly disqualified for active business. He had our warmest sympathies while living, and we extend the same to his large circle of relatives and friends in the hour of their bereavement.

Army Surgeons Returned.—We learn, with pleasure, that our old and highly-esteemed friend, Dr. F. K. Bailey, after serving ably and faithfully as an army surgeon, all through the late war for suppressing rebellion, has returned to his old field of civil practice, in Joliet, where we are sure he will be cordially welcomed by all his old friends and many new ones.

A few days since, we had the pleasure of meeting our former friend and faithful pupil, Dr. C. Dumreicher, who had just graduated, with much credit to himself, in the spring of 1861. Only a month later, the first gun fired upon Fort Sumter awoke the nation to the realities of a gigantic war. Without waiting for a commission, our young and ardent friend joined almost the first mounted company raised in this State. But his medical attainments were soon called into requisition, and he was commissioned as assistant-surgeon. He served through the entire war with such faithfulness and satisfaction to the War Department, that he was promoted to the rank of Lieut.-Col. by brevet. He has now opened an office for practice in this city, and we hope he will receive all the patronage that his attainments and energy entitle him to.

Something Wrong.—We understand that since July last, the Surgeon-General has closed all the hospital records and

public archives under his control, against the inspection of all persons outside of official positions. The reason unofficially alleged for this singular course is, that the Medical Bureau is preparing a work for publication, based upon these records, and that the Bureau is vain of being the instrument of the first publication of the facts.

Now, if these records were the private property of the Surgeon-General, procured at his own expense, there would be some justification for his turning his keys against all outside gleaners of facts and history. We suspect that Congress and the people have not authorized any such exclusiveness; and it remains to be seen whether they will approve the policy.

Longevity of Classes.—During the last Parliament of Gt. Britain, there have died 112 peers, the united ages of which amounted to 7583 years, or an average of 67 years each. The archbishops died at the average age of 80; the viscounts, at 74; the bishops, 73; the counts, 68; the marquises, 66; the dukes and barons, 64. The average age of the Scotch peers was 88; of the Irish, 63.

The New Orleans School of Medicine was to open its regular annual term of lectures on the 13th of November, with many of its old faculty at their posts, and we doubt not but it will speedily attain to its previous prosperity and usefulness.

The Medical School at Nashville, we think, is also progressing in its active career, under the leadership of our old friend, Prof. W. K. Bowling, who has been one of its faculty through all its days of former prosperity. We rejoice at all these evidences of returning enterprise in the profession of the Southern States.

DEATHS.

Timothy Childs, M.D., late Professor of Anatomy in the New York Medical College, died at Norwich, Conn., on the 3d inst., from an overdose sulphate morphia.

Sir William Hooker, an eminent English Botanist is dead.

MORTALITY FOR THE MONTH OF OCTOBER.—The mortality report of municipal health department for the month of October has just been completed, and will be found below. The total number of deaths for the past month, as here reported, is 360, showing an increase of 90 over the corresponding month of last year. This increase is partly caused by the frequency of those diseases resulting from sudden and varying changes of climate, such as have prevailed during the month past; but it is chiefly owing to the remarkable growth of vegetation during the past season, owing to the lateness of the frosts, and which becoming rank, caused the prevalence of miasmatic and other vapors, inducing a state of atmosphere especially tending to produce disease:—

DISEASES.

Accidents,	7	Inflammation of Lungs,	4
Apoplexy,	1	Intermittent Fever,	1
Brain Fever,	3	Lung Fever,	1
Billious Fever,	7	Liver Complaint,	1
Cholera Infantum,	2	Lung Disease,	2
Cholera Morbus,	2	Lockjaw,	1
Congestion of Brain,	1	Marasmus,	1
Congestion of Lungs,	2	Nervous Fever,	7
Cold,	2	Old Age,	8
Cancer in Head,	1	Paralysis,	2
Childbirth,	6	Rheumatism,	1
Congestion of Bronchial Tubes,	1	Stomach Disease,	1
Consumption,	32	Suicide,	1
Convulsions,	6	Stillborn,	9
Cramps,	18	Summer Complaint,	14
Croup,	4	Scrofula,	1
Decline,	1	Ship Fever,	1
Delirium Tremens,	1	Spasms,	1
Diarrhœa,	11	Sore Throat,	7
Diphtheria,	36	Scarlet Fever,	7
Dropsy,	6	Typhoid Fever,	15
Drowned,	3	Typhus, "	2
Dysentery,	9	Teething,	18
Erysipelas,	1	Tumor,	2
Green Canker,	1	Water on Brain,	1
Head Disease,	1	Whooping Cough,	2
Heart Disease,	3	Unknown,	33
Hemorrhage,	1		
Inanition,	1	Total,	360
Inflammation of Bowels,	10		

AGES OF THE DECEASED.—Under 5 years, 196; over 5 and under 10 years 33; over 10 and under 20, 13; over 20, and under 30, 23; over 30 and under 40, 37; over 40 and under 50, 18; over 50 and under 60, 12; over 60 and under 70, 10; over 70 and under 80, 10; over 100, 1; unknown, 7. Total, 360.

NATIVITIES.

Chicago,	193	England,	8	Sweden,	7
Other States,	73	Germany,	32	Italy,	1
Bohemia,	1	Ireland,	31	Unknown,	4
Canada,	3	Norway,	3		
Denmark,	2	Scotland	2	Total,	360

Revival of Medical Literature and Medical Schools in the South.—We have received an announcement, saying that the January number of a new journal, called the *Richmond Medical Journal*, would be issued early in December, to be edited and published by Drs. E. S. Gaillard and W. S. McChesney. It is to be published monthly, containing from 80 to 90 pages, with a subscription price of $5,00 per annum, payable in advance. We recognize in the name of Dr. Gaillard, an able and ready writer, and have no doubt but the journal, under his management, will be abundantly worthy of the patronage of the profession. We add it to our exchange list with much pleasure.

We have also received the following printed circular, which we insert in full:—

Sir:—I propose to edit and publish, in Memphis, Tennessee, *The Medical and Surgical Monthly*. The size of the journal will be not less than quarto; though I anticipate, from the encouragement of others and yourself, to give each month, to a large number of subscribers, not less than 64 pages of printed matter, interesting to mediciners, and important to patients. I will endeavor to give to the journal a character not unworthy either of the locality or the age of its publication.

Will you please to interest yourself in this matter, and return to my address, at an early day, the names of subscribers?

If this request is promptly and extensively responded to, the first number of the journal will be published in January, 1866.

Subscriptions will be received for six months, and one year: One year, Twelve Numbers, $6.00; One-half year, Six Numbers, $4.00. Very Respectfully,

FRANK A. RAMSEY, A.M., M.D.,

Memphis, Tenn., Oct. 19th, 1865. *No. 5 Adams St.*

Military Surgery in France.—A work of paramount importance, modestly called a Report to the Medical Board of the Army, has lately been published by M. Chenu, a high authority in the Medical Department. It is entitled, "A Medico-Chirurgical Report on the Flying and Stationary Hospitals of the French Army, during the Crimean Campaign." It has no less than 800 quarto pages, and more than 100 tables and statistical computations. The author, says the *Gazette Medicale de Paris*, has been anxious to publish facts, irrespectively

of every consideration; and we doubt not that the book will be eagerly sought by military surgeons in this country, as Mr. Longmore's is in France. M. Chenu is extremely minute in his classification, both as regards the field and hospitals; and the labor bestowed must have been immense. The comparative mortality of the French and British armies is thus stated:—

	French Army.	British Army.
Effective men,	309.268	97,864
Deaths,	95,615	22,182

The work is divided into numerous parts, including all the injuries and diseases which have been observed. Wounds from gunshot occupied much of the author's attention, and he dwells particularly on the fact that such wounds, owing to the peculiar firearms now used, are more serious, and more frequently met with than formerly. Herein, he quite agrees with Inspector Longmore, who states that the army of the Duke of Wellington, on the 16th, 17th, and 18th of June, 1815, including the battle of Waterloo, had 8000 wounded, whilst at Solferino, the Franco-Sardinian army had 16,000, and the Austrians 21,000. Hence, the necessity of increasing the surgical material and the medical officers in any future campaign. The author gives a vivid and extremely true picture of the perils and hardships of the non-combatant military surgeon. The following figures show the relative sacrifice of life among combatant officers and military surgeons:—In the Crimean campaign, of 5852 combatant officers of every rank, 779, or 17 per cent, were killed, or died from wounds received in the field, and 402, or 7·30 per cent, died of various diseases (these figures include the commissariat, chaplains, &c., &c.) The mean number of medical men was 450, of whom 82, or 18·22 per cent, died of various diseases. The typhus, at Constantinople, carried off 26 combatant officers, viz.: 0·17 per cent, whilst by the same scourge, 58 medical officers perished, viz.: 12·88 per cent. These figures speak for themselves.

Antagonistic Effects of Calabar Bean and Atropia.—Dr. Kleinwachter states (*Berliner Klinische Wochenscrift*, 1864,) that in the ophthalmic department of the hospital at Prague, last August, four boys engaged in cleaning the room, drank a portion of a solution of atropia, thinking that it contained spirits. Two of the boys either spat out or vomited the fluid, and exhibited no symptoms of poisoning; but the two others, who did not vomit, were distinctly poisoned—one, however, much more so than the other. The symptoms were those

of poisoning by belladonna, and consisted of delirium, dilatation of the pupils, feeble pulse, and in one there was coma, alternating with furious delirium. Both the patients were taken to bed, one of them being restrained in a straight jacket, and cold lotions were placed on their heads. Dr. Kleinwachter happened, accidentally, to have with him a solution of the Calabar bean extract in glycerine, and, by way of experiment, he gave to the patient who was most affected, ten drops of the solution, (six grains of extract to one drachm of glycerine,) which, in about a quarter of an hour, produced violent vomiting. The pulse became stronger and quicker, rose to 75 and then to 80 in the minute, the temperature of the body fell, the delirium abated, the patient became more quiet, consciousness returned, urine was passed with some pain in the urethra, and the pupils became somewhat contracted. In the case of the other patient, who was less affected, some of the extract of Calabar bean was dropped into the eye, but without any good effect; for, on the next day, the symptoms were almost unchanged, while the patient who had taken the solution of the Calabar bean internally had almost completely recovered. The rapid and striking improvement in one of these cases appears manifestly to be attributable to the administration of the Calabar bean extract, for the patient who was not treated in the same manner showed no improvement for forty-eight hours.—*Brit. & For. Med. Chir. Rev., and Cincinnati Lancet & Obs.*

Entozoa in the Calf.—The recently-issued part of the "Proceedings of the Royal Society" contains a paper by Dr. Cobbold and Prof. Simonds, "On the production of the so-called 'acute cestode tuberculosis' by the administration of the proglottides of Tænia mediocanellata." The symptoms of the disease, which nearly caused the death of the calf, are fully detailed, and in the description of the *post mortem* examination all the muscles are named in which the parasites appeared. The authors conclude their paper as follows:—"From the number of young vesicles present in the minute portion of muscle removed by operation from the living animal, we had (in the pages of the *Lancet*) publicly announced our belief that we might ultimately find 30,000 cysticerci developed in this calf; but as the larvæ were subsequently found to be almost entirely confined to the superficial muscular layers, it turned out that our calculation was considerably beyond the mark. Nevertheless, from *post mortem* data, we estimate that there were between seven and eight thousand 'measles' present, and one of us

counted 130 vesicles at the surface of a single muscle." The authors express their indebtedness to Dr. Greenhow, Dr. Anderson, and Mr. Brookhouse (Nottingham), for the specimens of tapeworm employed in this interesting experiment.—*Lancet.*

Diphtheria.—*A Circular from Dr. Norton.*—Dr. O. D. Norton, of Cincinnati, was placed on a special committee by the American Medical Association to report on diphtheria. He has handed us the following list of queries, and any of our readers who have had opportunities for observing the disease, will confer a favor that will be appreciated and acknowledged, by corresponding with Dr. Norton:—

I. Has diphtheria occurred in your practice? If so, when did it first make its appearance? (Please state the year and the months in which it prevailed, and how many cases came under your observation.)

II. Did it occur as a sporadic, endemic, or epidemic disease?

III. Did the disease affect one class or age more particularly, and what were its general characteristics?

IV. What in your opinion are the general, and what the exciting cause or causes of the disease?

V. Do you consider diphtheria and scarlatina identical?

VI. Do you consider it communicable?

VII. What other diseases were especially prevalent at the time?

VIII. Do you know of any disease having affected animals during the occurrence of diphtheria in the community?

IX. Have you seen the diphtheritic membrane developed upon the cutaneous surface or upon wounds?

X. In what proportion of cases has the disease invaded the larynx? Also, the œsophagus?

XI. What have been the sequelæ?

XII. What has been the result of *post mortem* or microscopical examinations?

XIII. In what proportion of cases have you found albumen in the urine?

XIV. What has been the rate of mortality? and what the immediate cause of death?

XV. What was the general course of treatment pursued by you, and what particular remedial agents seemed to be most productive of good?—*From the Cincinnati Lancet & Obs.*

Dry Gangrene of the Hand from Injections into an Aneurismal Sac.—M. Chabrier has published in the *Mont-*

INDEX TO VOLUME VI.

	Page.
Atropia and Morphia, Antagonism of,	689
Abnormal Fœtus,	390
Acute Gastritis,	139
Acute Orchitis, Treatment of,	47
American Medical Association, 57, 58, 113, 122, 172, 180, 252, 308, 315, 379, 391, 441, 586,	588
Arsenic Eating in Styria,	58
Asthma, Treatment of,	61
Alkaline Sulphites, On the Transformation of,	108
Army Medical Intelligence,	123
American Pharmaceutical Association,	171
American Dental Association,	573
Alphabetical Index to Braithwaite's Retrospect,	172
Apoplexy of the Spinal Gray Substance,	221
Assassination of President Lincoln,	310
Address by Dr. Bigelow,	392
" " Dr. N. S. Davis, 396,	430
Anæmia and Anæmiac Palpitation	735
Anstie, Francis E., On Stimulants and Narcotics,	743
Anæsthesia and Dr. W. T. G. Morton,	743
Army Surgeons Returned,	752
Atropia, Antagonistic Effects of,	756
Aneurismal Sac, Gangrene from Injection into	758
Appliances for Invalids,	759
Air, Injection of, into Foul Abscesses,	760
Address of Dr. Allport before the American Dental Association,	573
Abortion, Will Oleum Tanaceti Cause,	446
Anæsthesia, Electrical, 444,	589
Bacteridia and Malignant Pustule,	368
Braithwaite's Retrospect of Practical Medicine and Surgery,	55
" " Index,	172
Bone, Regeneration of,	62
Belladonna in the Treatment of Iritis,	165
Black Troops and Consumption,	186
Beebread as a Diuretic,	557
Broncho-Pneumonia, Complicating Typhoid Fever,	712
Biddle, J. B., on Materia Medica,	742
Blood, Physiology of,	735
Catalytic Diseases, Therapeutic Value of Sulphites,	38
Chicago Medical College, 56,	117
Climate and Diseases of New Mexico,	65
Correspondence from New York,	79
Chicago Medical Society, 118,	172
Cerebro-Spinal Meningitis, 143, 208,	615
Citric Acid in Diabetes,	254
Cancer; Lecture on the Surgical Treatment of,	293
Chicago Academy of Sciences,	380
Compliment to an Army Surgeon,	381
Cases in Practice,	545
Cadaver, Antiseptic Injection for,	588
Continued Fever. By N. S. Davis, M.D., &c.,	600
Cholera at Constantinople,	645
Cutaneous Medicine and Diseases of the Skin,	693
Chicago, Sanitary Condition of,	705
Clinical Cases in Medical Wards of the Mercy Hospital,	712
Chloroform, Use of Internally,	727
Classes, Longevity of,	753
Childs, Timothy, Death of,	753
Calabar Bean, Antagonistic to Atropia,	756
Choryza, Treatment of,	761

Page.

Davis, N. S., Report on Sanitary Measures in Chicago, ---------- 705
Davis, N. S., Clinical Lectures,-- 600, 694, 712
Davis, N. S., On Claims of Dr. W. T. G. Morton,---------- 743
Dental Association, American, --- 573
Diphtheria,----------1, 681
Diphtheria, Circular by Dr. Norton, ---------- 758
Deformities of the Feet, with Treatment,---------- 125
Digitalis, its Physiological Effects, 188
Demand for Physicians,---------- 190
DeWitt Co. Medical Society,--220, 566
Diuretics in the Treatment of Malarious Fevers, ---------- 269
Dysmenorrhœa, Slitting the Cervix in, ---------- 304
Dysentery, a New Remedy for,--- 609
Diary, Physician's Visiting List, &c., &c.,---------- 694
Duodeno-Hepatitis, or Acute Jaundice. By N. S. Davis, M.D., --- 694
Deaths—
Prof. D. L. McGugin, Keokuk,- 570
Dr. J. Couper, New Castle, Del., 571
Dr. Melvin N. Rust, Surgeon of U. S. Vols.,---------- 572
Dr. E. A. Steele, ---------- 752
Dr. Timothy Childs, ---------- 753
Dr. William Hooker, ---------- 753

Excessive Use of Sugar, Effects of, 48
Epidemic Cerebro-Spinal Meningitis, ---------- 90
Essence of Turpentine in the headaches of Nervous Women, ----- 187
Enlargement of the Prostate, ---- 205
Epidemic. Plague in St. Petersburg, ---------- 249
Epidemics in Russia and North Germany, ---------- 301
Entozoa in Veal and Beef, ------ 305
Eye, Diseases of, ---------- 321
Epidemic Erysipelatous Fever. By R. E. McVey, Waverly, Ill.,--- 331
Explanation,----------532, 635
Entozoa, in the Calf,---------- 757
Electrical Phenomena in the Human Body,---------- 759
Electrical Anæsthesia, ------ 444, 589

Fibrous Tumors of the Uterus, On the Treatment of, ---------- 229
Fibrous Tumors, Treatment of,--- 236
Face, Partial Reconstruction of,-- 243

Page.

Fœtus, Abnormal,---------- 390
Fox River Valley Medical Association,---------- 533, 658
Food and the Teeth. By J. Paul, M.D., Trenton, N.J.,------ 623, 661
Fever, An Eastern Antidote against, ---------- 599
Fever, Lectures on,---------- 694
Fever, Typhoid, Clinical Remarks on. By N. S. Davis, M.D.,---- 712
Fever, On the Treatment of,----- 54
Fever, Marsh, Pathological Appearances in, ---------- 718
Fossil Man, ---------- 761
France, Military Surgery in,----- 755

Gun-Shot Wounds and other Injuries of Nerves, ---------- 115
Glaucoma, Its Symptoms, Diagnosis, and Treatment, ---------- 116
Gastritis, Acute, ---------- 139
Gas, Nitrous Oxide, Properties of. By Geo. J. Ziegler, M.D., ---- 742
Gangrene of the Hand, from Injections into an Aneurismal Sac,-- 785

Hospital Appointment, ---------- 121
Hospital Gangrene. By John E. Link,---------- 147
Hospital, Pennsylvania, -------- 253
Hand-Book of Skin Diseases, ---- 306
Hospitals, Parisian, ---------- 381
Homœpathy, Surgeon-Gen. Barnes on, ---------- 442
Health of the Pacific Coast,------ 445
Hydrocele, Treatment of,-------- 445
Hooker, Sir William, death of,--- 753
Human Body, Effects of Lightning on,---------- 759

Illinois State Medical Society, --- 57, 121, 179, 272, 308, 585
Indian Ink, Substitutes for,------ 188
Illinois State Hospital for the Insane, Ninth Biennual Report,-- 243
Irritable Ulcers, Sour Milk to, --- 246
Inflammation, Lectures on,------ 694
Injections into Aneurismal Sac, -- 758
Invalids, Appliances for,-------- 759
Injection, Danger of Subcutaneous, 760
Injection of Air into Abscesses and Fistulæ, ---------- 760

Letter from Dr. W. N. Cote, ----- 44
London Lancet,-----56, 308, 728, 763
Larynx of the Negro,---------- 183
Letter from Liverpool,---------- 214

Page.

Livingston, Dr., Contemplated visit to Africa, ---------- 317
List of Officers and Committees of the Amer. Med. Association for 1866, ---------- 420
Lithotrity, Proofs of its Success, -- 433
Letter from Dr. N. S. Davis, ----- 437
Letter from Paris, ----------535, 653
Laryngoscope in Diseases of the Throat, ---------- 694
Longevity, in England and Wales, 762
Longevity of Classes, ---------- 753
Literature, Medical, in the South, 755

Military Surgery and Hygiene, A Treatise on, ---------- 54
Medical Lexicon, ---------- 115
Mortality of Chicago, 56, 119, 189, 316 443, 586, 636, 637, 754
Medical Intelligence, Foreign, --- 189
Medical Instruction, Summer, ---- 247
Medical Students, French, ------- 317
Medical Advertisements, Immoral, 532
Manual Army, Surgeons, -------- 568
Medical Schools in Chicago, ------ 569
Medical Colleges in Cincinnati, -- 635
Medical Colleges, ---------- 634
Medical Societies in Canada, ----- 688
Medicine and Surgery, Practice of. By W. H. Byford, M.D., ------ 692
Marsh Fever, Pathological Appearances Presented in, ------- 718
Medical School at Cairo, Ill., ---- 726
Meigs, J. Forsyth, on Pathological Appearances in Marsh Fever, -- 718
Merrill, A. P., on Chloroform Internally, ---------- 727
Morton, W. T. G., and Anæsthesia, 743
Morphia, Atropia and, Antagonism of, ---------- 689
Military Surgery in France, ----- 755
Medical Department, Records of, - 761
Malgaigne, Prof., ---------- 762
Mortality for October, ---------- 754
Medical Schools in the South, ---- 753

Notice, ---------- 116
New Hospital for Women and Children, ---------- 120
New York Medical Journal, ----- 173
New Remedies, A Report on, ---- 285
New York State Lunatic Asylum, 307
Necrosis as an effect of Erysipelas, 338
Nose, Diseases of, ---------- 362
New Members Elected, American Medical Association, ---------- 417
New Dispensatory, ---------- 442

Page.

Onychia, Treatment of, ---------- 60
Obituary, ---------- 62, 247
Organs in the Human Subject unprovided with Nerves, &c., ---- 124
Œsophagism, ---------- 253
Ophthalmology, ---------- 381
Ophthalmoscope, A Simple, ------ 445
Orthopedic Surgery, Report on. By David Prince, M.D., ------- 449
Ophthalmia, Gonorrhœal and Purulent. By J. S. Hildreth, M.D., 673
Orchitis Treatment of Acute, ---- 47
Oleum Tanaceti, Will, Cause Abortion, ---------- 446

Pneumonia, Double, with Chronic Bronchitis, ---------- 36
Pyæmia, Two Cases of, ---------- 105
Permanganate of Potash as a Remedy, ---------- 111
Personal, ---------- 121, 381
Petroleum, Effects of, on Nervous System, ---------- 123
Purification of the Press, -------- 173
Practical Items, ---------- 181
Pharmaceutists' and Druggists' Practical Receipt Book, ------- 243
Public Address. By N. S. Davis, M.D., ---------- 257
Procidentia, A Radical Operation for, ---------- 307
Patents for Surgical Instruments, 340, 608
Peritonitis, Tubercular, ---------- 356
Peritonitis, Puerperal, ---------- 385
Papers and Reports from Special Committees Am. Med. Associa'n, 413
Puerperal Fever, complicated with Secondary Uterine Hemorrhage. By Swayne Wickersham, M.D., 549
Prescription Book, Physicians', -- 569
Premium Offered, ---------- 589
Poisoning, Case of, with Arsenious Acid. By R. C. Hamill, M.D., - 643
Protoxide of Nitrogen, its Medical Properties and Applications, --- 694
Practical Pharmacy, ---------- 701
Practice, Cases in, ---------- 545
Physiology of Blood, ---------- 735
Pathological Appearances Presented in Marsh Fever, ------- 718
Prize on Vaccino-Syphilitic Question, ---------- 762

Quinine, An Ounce at a Dose, ---- 317
Quackery in Turkey, ---------- 432

	Page.
Respiration after Decapitation	61
Rubeola complicated with Pneumonia. By J. P. Wardner, M.D.	77
Renal Calculi,	123
Remittent Ophthalmia—Strumous Ophthalmia,	151
Review of a Paper on the Unknown Functions of the Pancreas,	156
Recent Progress in Surgery,	172
Resolutions on the Death of Drs. Knight, Hooker, and Silliman,	421
Report of the Committee on the Case of M. A. Pallen,	427
Renewal of Life,	567
Remarks of Dr. N. S. Davis, to the Members of the American Dental Association,	576
Report on the Means of Improving the Sanitary Condition of Chicago,	705
Science of Light, Recent Advances in,	25
Scarlatina, Condition of the Stomach and Intestines in,	50
Syphilis, Recent Investigations upon the Subject of,	133
Sulphuric Ether vs. Chloroform,	176
Small-Pox, Protection from,	193
Surgical Pathology, Lectures on,	243
Small-Pox in Lahore,	303
Scrivener's Palsy, Lectures on,	342
Starvation of Prisoners,	371
Sanitary Commissions and Fairs,	376
State Medical Society, Illinois,	378
Soldiers' Home,	380
Speech of Dr. N. S. Davis, at Long Island,	424
Speech of the Governor of Massachusetts before the Amer. Medical Association,	426
Small-Pox in Algiers,	432
Surgeons Wanted for the Army at Louisville, Tenn.,	445
Surgeons for the Army,	532
Sanitary Condition of Chicago, from April 1st to Aug. 1st, 1865,	559
Scabies, Diagnosis and Treatment of,	583
Surgical Cases. By E. Andrews, M.D.,	596
Schirrus, Case of. By R. S. Lewis, M.D.,	641
Stomach, Diseases of,	693
Stricture of Urethra, Treatment of,	593
Typhus and Typhoid Fevers, Alcoholic Stimulants in,	82
Tumors, Destruction of, by Electricity,	123
Treatment of Squint by Operation,	168
Typhoid Fevers, Synopsis and Treatment of,	555
Typhoid Fever complicated with Broncho-Pneumonia. By N. S. Davis, M.D.,	712
Treatment of Fever, On the,	54
Uterine Tumors, Treatment of,	129
Uterus, Expulsion of a Fleshy Mass from the,	541
Vaccine Report,	247
Vest-Pocket Medical Lexicon,	307
Varicose Veins, Obliteration of. By E. Andrews, M.D.,	327
Volunteer Papers, (A.M.A.)	413
Weights and Measures used in Pharmacy,	185
Wanted, Medical Practice,	587
Zymotic and Constitutional Diseases, &c., On the Prevention of,	84

pelier Medical, the case of a man suffering from traumatic aneurism at the bend of the elbow. Compression having been tried in vain, an injection of five drops of solution of perchloride of iron into the sac was resorted to. The pulsations were thereby not arrested, and, as the patient seemed to have been but little inconvenienced by the injection of the coagulating fluid, a second operation of the same kind as the first was performed two days afterwards. The hand became immediately blanched, like a limb severed by amputation, and severe pain was complained of. The dry gangrene began at the tip of the fingers, and was in a fortnight so complete that the hand resembled a dried black claw. The line of demarcation had very early been observed about the wrist, and the hand was finally removed by a few touches of the scalpel. The aneurismal tumor had, in the meanwhile, become quite solid, and devoid of any pulsations. As the effect on the hand was so instantaneous, M. Chabrier thinks that the mischief was caused by embolism.

Appliances for Invalids.—At the recent Fair of the American Institute in New York, Mr. T. McElroy, of New York, had on exhibition a surgical operating table, which is so contrived as to put the patient in any position that may be required for the most difficult operation. The same inventor had an ingenious invalid bedstead.

Furman & Wells, of Addison, N. Y., exhibited O. P. Furman's patent invalid bedstead; and E. Marx, of New York city, had what he calls a patent patient elevator, for raising sick and disabled persons from their beds with ease and comfort, and placing them in any position nature or convenience may require.—*Med. & Surg. Rep.*

Singular Electrical Phenomena in the Human Body following Lightning Stroke.—M. Boudin recently sent a note to the French Academy of Sciences showing a powerful electric action in the bodies of persons recently struck by lightning, based on two observations which he related.

The first was the case of a man, who, June 30th, 1854, was killed by a stroke of lightning, near the Garden of Plants, at Paris, and whose body remained for some time exposed to a heavy rain. After the storm, two soldiers, wishing to raise the body, received each a violent shock at the moment when they touched it.

In the second case, two artillerists, charged with raising two electric telegraph posts which had been thrown down September

8th, 1858, by a storm at Zara, in Dalmatia, having, two hours after the storm was over, taken hold of the telegraph wire, felt at first two slight shocks, and then were suddenly thrown down. Both had their hands burnt; one of them, indeed, did not return to consciousness. The other, in attempting to raise himself, fell back again immediately on touching with his elbow one of his comrades, who had been drawn by his cries to his assistance. This last man, also thrown down in his turn, received various injuries of a nervous character, and his arm showed a burn on the skin where he had been touched.—*Boston Med. & Surg. Jour.*

Danger of Subcutaneous Injections.—Prof. Nassbaum, of Munich, has just published an interesting account of an accident which happened to himself. Suffering from neuralgia, he had injected morphia under his own skin more than 2000 times—sometimes to the extent of five grains of morphia in twenty-four hours. Two months ago, he injected two grains of acetate of morphia, dissolved in fifteen minims of water, and accidently sent it direct into a subcutaneous vein instead of into the cellular tissue. He gives a graphic account of his dangerous position for about two hours, after which the effect passed off. He has seen similar effects in a small degree in two of his patients, and the practical lessons are, that as it may be impossible to avoid veins at all times, and one may be punctured unawares, subcutaneous injection should always be done *very slowly*. The effects are so instantaneous that the syringe can be stopped at the first sign of danger, and some of the injected fluid, mixed with blood, may even be sucked out again by the syringe. It is very remarkable how the effects of the same dose of the same substance differ when injected directly into a vein and mixed with venous blood, and when they filter into the blood from the cellular tissue through the unbroken coats of the vessels.—*Med. Times and Gazette.*

Injection of Air into Foul Abscesses and Fistulæ.—Prof. Rozer states that there is no better means of treating an abscess, the contents of which have become foul and stinking, than by the frequent injection of air by means of an elastic catheter and syringe. The patient is to be instructed to repeat this injection sufficiently often to prevent the accumulation of pus; and this operation not only adds much to comfort by removing the nauseous smells, but also seems to greatly expedite the contraction and closure of the cavity of the abscess.

It is of especial benefit in the treatment of the fistulous openings remaining after emphysema, and attended with such a disgusting smell. This is speedily removed by aid of the injections, and the healing of the fistula promoted. This is often retarded for months, owing to the valvular condition of the track of the fistula preventing the free issue of the pus, which is secured by the daily passage of the catheter for the purpose of injecting the air.—*Archiv. der Heilkunde*, in *Medical Times and Gazette.*

Treatment of Choryza.—M. Luc, an Assistant-Surgeon in the French army, recommends the inhalation of tincture of iodine in nasal catarrh. "I inhaled tincture of iodine," says he, from a phial for one minute at a time, at intervals of about three minutes; the heat of my hand was sufficient to promote the evaporation of the iodine; the headache yielded first, sneezing became less frequent, the secretion less copious, and although the inhalation caused a burning sensation in the throat, I was cured at six o'clock P.M., of a cold which from nine A.M., to three P.M., had been sufficiently violent to compel me to use four pocket handkerchiefs."—*Cincinnati Lancet and Observer*, from the *Dublin Med. Press.*

M. Luc claims to have had equally good results in several other cases.

Records of the Medical Department.—Surgeon-General Barnes has sent a communication to the Secretary of War, setting forth the perilous condition of the records, etc., in the Medical Department, which is situated in a building in no way fire-proof, and by reason of its proximity to wooden buildings, liable at any moment to be burned up. Already the books and papers most valuable, in a scientific point of view, and to the families of deceased soldiers, have accumulated so that they occupy the entire story of a very large building. A proposition will be made in Congress immediately upon its organization, to construct fire-proof buildings for the State and War Departments, the latter to include suitable apartments for the Surgeon-General.—*Med. & Surg. Rep.*

A Fossil Man has been dug up in a bed of drift between Veyziat and Oyonnax, near Nantua, (Ain). The body was found in an inverted posture, but the bones did not adhere together, but were brought out one by one. The matter will probably be brought before the the Academy of Sciences.—*Abeille du Bugey.*

Longevity in England and Wales.—The returns of mortality for England in the year 1863, just completed, record the death of 213 men and 430 women ninety-five years old or upwards when they died. Twenty-one men had reached 100 or upwards, and one at Chelsea was 109. Sixty-two women had also completed a century of life or more, and one at Liverpool was 112 years old.

Prof. Malgaigne.—We regret to state that the health of this eminent surgeon is far from improving. He has just resigned his surgical chair at the Faculty of Medicine at Paris.

A Prize on the Vaccino-Syphilitic Question.—The Medico-Chirurgical Society of Bologna (Italy) offers for 1867, a prize of £20 on the following question: Determine by facts whether the vaccine virus may or may not transmit syphillis. Another prize (£40) is offered on the subjoined subject: Make known, and give its proper value to, the share which Italians have had in the advancement of surgery in the nineteenth century.—*London Lancet.*

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